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Consultation on Transport

LAST year was the first in which all the Transport Users' Consultative Committees functioned, and the report for 1952 of the Central Transport Consultative Committee refers to the useful and important services of these eleven bodies. There were many meetings of sub-committees to investigate particular complaints. Objectors participated themselves in inspections of facilities. One such investigation was carried out on Cannon Street-Hastings trains, as a result of which the committee recommends provision of up-to-date stock as a first priority, and electrification between Sevenoaks and Tunbridge Wells to increase line capacity on a section where at present Hastings line passengers may have to stand in evening rush-hour trains. The rolling stock recommendation has already been implemented by the renovated stock referred to in our February 20 issue. Numerous criticisms were received of the 7s. 6d. charge for train meals, and the prices of food and beverages in refreshment rooms. The committee is satisfied that present charges are not excessive with regard to current costs and the obligation on the Hotels Executive to trade profitably. It recognises catering as a facility likely to attract traffic, however, and recommends that prices should be at a level to encourage travel by rail on the grounds that additional fares would help to compensate for catering losses. Such a policy would be more practicable if catering were still a railway responsibility, as we have repeatedly urged it should be. Both traders' season tickets and bulk travel vouchers were considered by the committee to be useful facilities from the point of view of creating goodwill for railways among important users, and recommendations to reconsider their withdrawal were made to the British Transport Commission. Complaints were received of slow deliveries of goods, increased breakages, and less prompt consideration of claims. Direct discussions between the complainants and the executives concerned were recommended, and are reported to have brought satisfactory results. The report is an interesting record of methods adopted and progress achieved in establishing the contact between users of transport and the industry which is essential for confidence and the mutual understanding of problems.

A Turning Point in Transport

THIS year's annual luncheon of the Mansion House Association on Transport, reported on another page, was naturally the occasion for summing up the working of the 1947 Act and looking ahead to the situation foreshadowed by the new Bill. Speakers for the Association referred appreciatively to co-operation received from the British Transport Commission, the Railway Executive, and the Transport Tribunal, and the hope that "although the body will die the spirit will live on" was sympathetically endorsed. Sir Alfred Faulkner, President of the Association, expressed himself in favour of close Parliamentary scrutiny of nationalised industries, with Government intervention if necessary, and he quoted the fact that the money of the B.T.C. was guaranteed by the Government, which made it public money, so that Parliamentary intervention was inevitable and right. His example of intervention over the 1952 charges scheme, however, is not one that is generally considered a model of how action of this sort should be conducted. In consequence of the death three days previously of Queen Mary, the Minister of Transport was unable to attend the luncheon, but his speech was read for him. It emphasised an aspect of the future of transport to which surface carriers must not be blinded by concern over matters of organisation, namely the expanding capacity of the world's civil air fleets.

British Staff in Argentina

WHEN the British-owned railways in Argentina were taken over by the State on March 1, 1948, British staff with salaries of over ps. 1,000 a month were offered five-year contracts, renewable at the end of that period. The contracts of 175 British technicians engaged under this arrangement expired on February 28, and it has been announced by Ministry of Transport sources in Buenos Aires that about 25 men in key positions will be asked to remain for a further two or three years, and that the remainder will be repatriated and will be entitled to a pension. This will be an Argentine State Pension, based on the compulsory insurance contributions the employees have been paying and taking into account their probable length of service if their contracts had not been terminated. The small number of British employees affected by these arrangements emphasises the extent of the exodus that took place after nationalisation in Argentina, an exodus from which railways in many other parts of the world have gained by the acquisition of technical skill. Another sign of the close of an era in Argentine railway history has been the appearance in Buenos Aires local papers of an announcement calling on all who consider themselves creditors of the British companies in liquidation to present their claims within 30 days or forfeit all right to them.

S.A.R. Finances Sound

SPEAKING on the Railways & Harbours Part Appropriation Bill, which has passed all its stages in the House of Assembly, Mr. P. O. Sauer, South African Minister of Transport, said there were solid reasons for believing that the general finances of the railways were very sound. He had every expectation that railway revenue

vis-à-vis expenditure would increase and that the situation next year would be satisfactory. The South African Railways did not intend to increase tariffs. In 1951, Mr. Sauer said, the railways had had great difficulty in carrying sufficient coal, but there had been a considerable improvement last year and he had the greatest confidence that there would be no coal crisis this year. During the year immediately before the war the railways carried 26,000,000 tons of goods and manganese exports totalled between 300,000 and 400,000 tons. Last year they carried 65,000,000 tons of goods, and manganese ore was now exported at the rate of 1,000,000 tons a year. He hoped that it would be possible for them to maintain this rate. In the past five years a total of £149,000,000 had been spent on improving the railways by capital works. It would take time to electrify the main lines and this might not be done for many years. South Africa produced the cheapest railway coal in the world, commented Mr. Sauer, and it would therefore not pay to electrify the lines now.

Overseas Railway Traffics

CANADIAN PACIFIC gross earnings for January were $35,766,000, and working expenses $35,675,000, against $34,601,000 and $34,482,000 for January, 1952; there was therefore a small decrease of $28,000 in net earnings for the month compared with last year. Canadian National operating revenues for January were $51,657,000. Operating expenses were $57,573,000. The net operating deficit was $5,916,000. In January, 1952, revenues were $51,470,000, expenses $51,261,000, and the net operating revenue $209,000. The C.N.R. figures are the operating revenues and expenses only and do not include taxes, equipment rentals, fixed charges, and so on. In the January, 1953, results of operations, the operating expenses include provision of $5,000,000 to pay wage increases for trainmen and firemen, retroactive to April 1, 1952, in accordance with the recent settlement. Midland Railway of Western Australia gross receipts for the year ended June 30, 1952, were £556,252, and working expenses £444,499; so that the net receipts of £111,753 compare well with those for the previous year (£43,464), whilst the proportionate increase in gross receipts (£395,729 for 1950-51) was greater than that in working expenses (£352,265).

The Consolidated Railroads of Cuba

ALTHOUGH the first railway in Cuba was opened in 1837, through communication between Havana, the capital, and the central and eastern provinces of the island was not established until 1902. In that year the Cuba Railroad Company was incorporated in New York and acquired the 356-mile line from Santiago to Santa Clara, connecting with the British-owned United Railways thence to Havana. The Cuba Railroad combined in 1924 with the Cuba Northern Railway to form the Consolidated Railroads, which now work 1,084 miles of standard gauge line. In a souvenir entitled "Fifty Years of Railway Progress," the changing fortunes of the undertaking are attractively described and illustrated. Still suffering from the effects of the economic crisis in Cuba in the 1930s, the Consolidated Railroads coped ably with the great increase in traffic which the war brought. From 1941 onwards reconstruction and modernisation were energetically pursued, at considerable cost. In ten years, 1,470,292 sleepers were renewed at a cost of $3.700,000 and $1,041,110 were spent on bridge reconstruction. In 1950-51, 72,292 trains ran, compared with 49,186 in 1941-42. The locomotive shortage early in the war was relieved by the arrival of ten McArthurs for hauling sugar trains, but the greatest change in motive power came in 1951 with the delivery of twelve Alco diesel-electrics which have enabled four hours to be cut between Santiago and Santa Clara.

Relations with the Public

THE last of a series of twelve pamphlets surveying nationalised industries published by the Acton Society Trust severely criticises the relations between these industries and the public. The most important criticism of the Railway Executive, and Regional public relations and publicity organisations is of "the new system introduced at the instance of the Transport Commission, whereby complaints are handled through the Public Relations Officer" instead of through the Commercial Department, and many railwaymen are said to feel that this "has led to a noticeable reduction in the effort made by certain departments to see that customers are left satisfied." This matter doubtless is one of the many dealt with as part or as a consequence of the reorganisation under the Transport Bill; if the new railway areas are given autonomy, managements will set up what they find to be the best system. The pamphlet also accuses the railways and other nationalised concerns of inadequate market research, instancing British Railways public opinion surveys as to locomotive liveries and to broadcast music at Waterloo Station as some of the few such measures taken; but apart from these rather unusual subjects, the commercial staffs of the Regions constantly take active steps to ascertain the views of all railway users on the services which are provided for them.

Commission and Executives

CRITICISMS in the pamphlet which do not reflect well on the present organisation concern the public relations of the British Transport Commission when an Executive is involved. Of the supply of special information, the survey remarks that the "Commission . . . have been suspicious of such research except on the rarest occasions. . . . The Executives themselves are sometimes willing to grant facilities in matters where they alone are concerned, but tend to be influenced by the attitude of the Commission." An example of this is railway receipts and expenditure, a centralised, B.T.C. subject; doubtless there is reluctance to give information which may mislead because of the complex financial relationship of Commission and Executives. As to consumer representation, it is true that the B.T.C. held that charges, which the Central Transport Consultative Committee wished to consider, were a matter for the Transport Tribunal; but it probably wished to save time and avoid duplicating the work of the Tribunal; in any case, it was overruled by the Minister. The survey criticises B.T.C. annual reports, which are stated to lack balance and coherence and omit reference to important questions; after allowance is made for the difficulty of editing, with space so restricted, this criticism must be admitted. On the credit side, the explanation of the proposed fares increases given to the public last January was certainly clearer than that preceding the last increase; this time, however, the case has been put by the two Executives concerned and there should be no excuse for misunderstanding.

Schaerbeek Depot

BEYOND Schaerbeek, the important junction on the northern outskirts of Brussels, an extensive depot and marshalling yard stretches for a distance of three miles in the direction of Antwerp. It has been rebuilt after almost complete destruction in the war, and an article elsewhere in this issue gives an indication of the comprehensiveness of the facilities which are provided. The modern locomotive shed with its 19 roads and repair facilities houses some 100 engines. The hump yard, comprising a total of 31 reception and 53 marshalling sidings, handles an average of 2,500 wagons a day. The shunting is performed by tank locomotives, but the arrival and departure sections of the yard are equipped with overhead wires, as freight trains from and to the Antwerp and Charleroi directions are hauled electrically, and traffic originating on other lines will be similarly hauled as further stages in the Belgian National Railways electrification programme are completed. Skids are used in the yard instead of retarders to check wagons running down from the hump. There is radio-telephone communication between the control tower and the drivers of the shunting engines, a beneficial provision in view of the prevalence of fog in the vicinity of the depot.

The Transport Bill

BY the time these words are published the Transport Bill will be on or close to the Statute Book. The impression we had was that as the Bill neared the point of becoming an Act, the enthusiasm for it grew less and less —even amongst its sponsors. There appeared to be a feeling of doubt among many in the Conservative Party as to what the effect of the measure would be. This doubt seemed to increase the nearer the Bill got to the Royal Assent. One of the clearest examples of this uneasiness, it seemed to us, was the Government's decision, at a late stage in the Parliamentary process, to drop the possibility of a part-time Commission and plump for the present arrangement of full-time membership. It seems to us that this decision reflected doubts about how the Act would work out. A natural step in such a situation would be to transfer the responsibility to the present Commission, which, at least, has had five years' experience of running nationalised transport. In other words, to "pass the buck." Whether our impressions are correct or not, we think the Government has good reason to feel uneasy about several of the main parts of its new transport legislation.

The Third Reading in the House of Lords reflected this tendency on the Government's part to bend over backwards in conciliating the Opposition. The scheme of railway organisation is now to be presented to Parliament first in the form of a White Paper which, said Lord Swinton, "would contain all the details of the scheme." Note the word "details." Any subsequent amendments to the scheme after it has been in operation will not be dealt with in a White Paper but will merely be submitted in the form of an Order for Affirmative Resolution. To such a pass has the organisation of the railways of this country now come! The Opposition's desire to have close examination of the initial scheme before it comes into force is solely due to its suspicion of the Government's intentions on Clause 16, and no doubt this is well founded. Because Clause 16 is such an unknown quantity, railwaymen are now to witness the spectacle of debates on the details of their organisation by politicians who have very little idea of what is required and have no practical experience under conditions of today.

The Government's principal uneasiness is no doubt concentrated on the arrangements for the disposal of road haulage. It is still very doubtful what vehicles are likely to be sold, and the decision to inform the banks that the Government considers purchase a suitable subject for credit merely reinforces the impression of uncertainty. Apart from the responsibility for such a hazardous financial transaction, there is the road-rail issue looming up. It seems pretty plain now that the Government would have been much better advised to leave nationalised road haulage as it is and merely to have lifted the 25-mile limit.

The Great Northern Railway (Ireland) Bill

THE text of the Great Northern Railway (Ireland) Bill was introduced simultaneously on March 26 in the Dail in Dublin and the Northern Ireland Parliament in Belfast. The Bill gives effect to the intention of both Governments, approved already in principle by their Parliaments, to acquire the undertaking of the company and provide for its future operation.

The Northern Ireland Minister of Commerce is to be authorised to enter into an agreement with the Minister for Industry & Commerce in Dublin, which includes provision for the equal sharing of the £4,500,000 compensation payable for the transfer of the undertaking and for the financial arrangements to apply in its future operation. Profits and losses of the new board, to be styled the Great Northern Railway Board, will be ascertained and apportioned yearly as follows: (*a*) so much of the profits or losses as are attributable to the operation of the undertaking exclusively in the area of one party shall be apportioned to that party; (*b*) the profits or losses not so attributable shall be equitably apportioned between the two parties. The scheme for the apportionment of profit and losses will remain in force for three years.

The board will be a joint board consisting of ten members, five to be appointed by each Minister, and will be established from a date to be agreed between the two Ministers, with general powers to operate the undertakings and provide transport services. Capital needed by the board for the purchase of additional railway rolling stock or for the purposes of the Dundalk Workshops is to be provided by the parties in equal shares; similarly the proceeds of the sale of assets coming under these two headings, if not used for replacements, are to be equally divided. Capital for other assets will be provided by, and the proceeds of the sale of other assets payable to, the party in whose area they are situated. The Bill contains further provisions designed to facilitate the carrying into effect of the terms of the agreement with respect to the apportionment and allocation of profits and losses, the sale of assets and disposal of proceeds, the payment for additional physical assets and with respect to the payment by the Ministry of its moiety of the purchase price of the undertaking. Negotiations between the parties may be reopened, at the instance of either one of them, for a revision of the terms of the agreement at any time after five years.

The board is required so to conduct the undertaking that, taking one year with another, the revenue is not less than sufficient for meeting expenses properly chargeable to revenue. It is to comply with such directions as may be given jointly by the two Ministers on matters of policy. The Ministers are to have power jointly to investigate the affairs of the board, which is to supply each Minister with any information which he may require; a copy of the board's annual statement of accounts, with the Auditor's report and the board's annual report, are to be laid before each House of Parliament.

On the establishment date the undertaking of the Great Northern Railway Company, other than land, is to be transferred to the board, and the Dundalk Works will be vested in the board by an Act in the Legislature of the Irish Republic. The board will assume all the rights and liabilities pertaining to its property. On the same date all the company's land in Northern Ireland will be transferred to the Ulster Transport Authority, and all the company's land in the Republic, other than Dundalk Works, will be vested in the Dublin Minister, but, in each case, the board is to be enabled to occupy and use such land for the purposes of carrying on the undertaking, subject to a liability to maintain the property and discharge outgoings.

The board will have power to enter into and carry out agreements with the Ulster Transport Authority, with a view to co-ordinating transport services. They will be able, where appropriate, to use and occupy land jointly, and joint machinery for negotiating terms and conditions of service of the employees of the two undertakings may be established. The acquisition price of £4,500,000 is to be paid in equal shares by the two Governments on the following basis: debenture stock £89¼ per £100 stock; guaranteed stock, £66 per £100 stock; preference stock £35 per £100 stock; and ordinary stock £28½ per £100 stock. Interest on debenture stock will be paid for a period not exceeding two months from the establishment date.

The Bill provides two procedures for the termination of services. Clause 19 provides for the termination of the service provided between Northern Ireland and the Republic by all trains operating over one of the following lines specified: Dublin-Belfast; Cavan-Portadown; Dundalk-Londonderry *via* Clones; and Bundoran Junction-Bundoran. Such a service may not be terminated without the consent of both Ministers, who, before reaching their decision, may jointly take the advice of the Chairmen of the Northern and Southern Transport Tribunals. The normal procedure for the termination of services is to apply, with the slight modifications provided in Clause 20, where it is proposed to terminate wholly any other transport service provided on a railway of the undertaking. Under either procedure, if the transport service is continued on a line as a result of the request of one Minister only, that Minister must accept financial responsibility for any loss sustained by the continuance of the service.

The board shall have two principal offices, one in Dublin and one in Belfast. All the officers and servants of the Great Northern Railway are to be transferred to the board on the establishment date. Recruitment to the clerical grades of the board will be by means of open competitive examination, but a proportion of vacancies may be filled by means of limited competitive examinations confined to persons who are or who have been in the employment of the company or the board. Provision is made for the establishment of pension schemes, and any existing pension rights of the staff transferred to the board are preserved. Regulations may be made to provide compensation for certain staff who may be displaced, or whose conditions of service may be worsened by the total termination of a transport service. The present company will be wound up after the transfer of the undertaking.

Standards of Service in Freight Transport

THE profound changes in the character and volume of railway freight traffic in Britain during the past 28 years and the adjustments made in services to meet the altered conditions are reviewed by Mr. J. L. Harrington, Chief Officer (Marine & Administration), the Railway Executive, in an article in the December, 1952, issue of the *British Transport Review*. It was based on an address delivered at the Bonar Law Memorial College, Ashridge. So successful have been the adjustments that British Railways are doing today substantially more work measured in net ton-miles than 25 years ago. Many measures to adjust services to changed needs moreover were implemented in the face of the postwar shortage of experienced staff and of limitations on capital works and renewals. All of which shows the flexibility of the railway organisation, now a century-and-a-quarter old, in dealing with constantly changing circumstances. The railways expanded while they provided the only practicable means of long-distance internal transport for expanding industries, but in the exercise of their monopoly provided for small as well as for large flows of traffic, passengers and goods. The revival with the development of the internal combustion engine of road transport has broken the monopoly, and there is the threat of the attack on high-rated merchandise traffic by the multi-engine high-capacity helicopter; hence the importance of the standard of service in railway freight traffic.

In handling coal traffic, some 40 per cent of British Railways' goods receipts and 75 per cent of the national coal output, emphasis is on a wagon supply which will keep each colliery in production and ensure regularly spaced deliveries. Coal traffic, Mr. Harrington states, is not so much a vast collection of individual consignments as a stream of fuel fed by the several collieries and tapped off to diverse users. The problem of peak traffic is more urgent than in most other aspects of transport; even although quick transit may not be vital commercially, speed of movement in marshalling yards, in offloading, and elsewhere is essential for good wagon turnround and supply. Nearly half the coal output for the home market goes to power houses and gasworks, and the proportion moved by rail shows this form of transport to advantage—private siding to private siding with bulk loads. There has been the difficulty since the last war of the short hours of winter daylight in yards and sidings, aggravated by bad weather and sickness. Against this, the number of wagons under or awaiting repair was reduced from 203,000 as at nationalisation in 1947 to 98,000 in 1951; nationalisation has facilitated re-routing of traffic flows to make best use of facilities; block coal train working has been extended; total tonnage capacity has been increased by introduction of larger wagons—a policy which, it is argued, should be further pursued not only with coal but with mineral and other traffic, the co-operation of the National Coal Board, the Gas Council, and the B.E.A. being enlisted in the case of coal wagons; and the number of grease-lubricated coal wagons taken over from private owners on nationalisation had been halved by the end of 1951. An improvement in the flow of coal would result from adoption of the suggestion made 25 years ago, by the Standing Committee on Mineral Transport, but never acted on even after coal nationalisation, that sales depots be set up at railway terminals for provision of suitable varieties of coals for local coal merchants and small consumers, thus ensuring greater movement in bulk. The siting of new power houses must be considered in relation to railway traffic flows for coal; and the railways must think of future coalfield development in relation to their trans-Pennine and other traffic routes.

One of the agreed conclusions of the International Railway Congress Association meeting in Stockholm last year (summarised in our September 12 issue) was that the private siding remains the most economical way of ensuring the door-to-door technique in railway freight transport, "provided that the capital costs are spread over a large number of wagons, that operating costs are reasonable, and that the siding is so laid out that the wagons can be brought up to the required sites." Although this conclusion seems to consider economy rather than speed, the three qualifications are noteworthy. The service for a siding with few wagons may be inferior to that given by cartage based on a large depot, and it may have to be given by a pick-up goods train, and if there is no reception siding there may be operating difficulties in fitting in a stop at the siding; this last factor, incidentally, may explain some of the exceptional difficulties in arranging train paths on the Belgian National Railways, where the average spacing between private sidings is 1·1 route-miles compared with a norm of two to four route-miles in most parts of industrial Europe (two in Great Britain).

Cartage is a field of service to the railway user in which the British companies were pioneers, though most railways in the world engage in it themselves or through associated undertakings. Allied with it is the development of containers and of the wagon transporter. The introduction of railhead centres, more particularly for less-than-wagonload consignments, and elimination of the small station has permitted speedier service. Much has been achieved by mechanisation of depots and improvement of cartage vehicles.

In improving the actual goods train service, traffic density is an important factor. Comparison with some other European countries shows that while the traffic density of British Railways, measured in ton-miles, is not greatly out of step with general experience (2·7 million trailing ton-miles per mile of single-track running line for British Railways, against 3·5 for Western Germany, 2·8 for France, and 4·1 for Switzerland), it exceeds, when measured in train-miles, all countries except Switzerland, where the figure is high because the Federal Railways are largely confined to major lines; the figure for British Railways is 11,000 train-miles per mile of single-track running line, against 10,000 for Western Germany, 6,000 for France, and 15,000 for Switzerland. The high proportion of unbraked freight vehicles on British Railways militates against efficient goods train working at peak-traffic periods or in inclement weather.

Although the position has been improved—there were 918 fully braked express goods trains per week in 1951, compared with 511 in 1938, and 1,634 partially braked in 1951, compared with 1,238 in 1938—only the fringe of the problem has been touched. Although, as Mr. Harrington states, general adoption of braking would necessitate some alteration in marshalling yard procedure and layout, those operating officers are probably right who maintain that no other measure would, for the cost involved, so benefit the operation of all trains. British Railways are further handicapped in provision of fast goods services by the demands of passenger traffic in densely trafficked areas such as that around London, where some important freight exchange routes are closed for varying periods daily to permit unhindered operation of suburban services. Even here the wholesale adoption of fitted wagons might afford relief. The French National Railways now give two classes of freight service differing as to speed and bulk with emphasis in the lower (ordinary, or R.O.) class on economic operation, but conditions in this country do not permit such differentiation of service as yet, though British Railways' parcels receipts are £25 million a year, with £8 million more

from mails and parcel post. If all or a far greater proportion of freight trains were fully fitted, reduction might be considered of the amount of merchandise conveyed in passenger trains, which would ease congestion at some passenger stations; on the other hand, parcels traffic is the *raison d'être* of some passenger trains, or at least contributes to justifying their operation, and its transfer from passenger traffic might result in deterioration of the passenger service.

Maintenance Considerations in Designing Buildings

DEVELOPMENT in the design of railway bridges has been more spectacular than in that of buildings and other structures, of which there is great variety. Moreover, these other structures, with the exception of such as the different types of covering over station platforms and engine sheds, generally conform to developments in general building construction. In general, the policy of the designer should be the same as for bridges, including an equal appreciation of both first and recurring costs of any structure. For a saving in the former at the expense of the latter is unquestionably false economy, and it is this axiom as applied to the design of railway structures other than bridges that is the argument repeatedly stressed by Mr. N. S. Cox in his paper recently presented to the Institution of Civil Engineers as Part 2 of "The Design of Structures in Relation to Maintenance and Inspection." Part 1, in which Mr. Turton covered this aspect of bridge design, was the subject of an editorial in our March 13 issue.

Mr. Cox discusses the subject from the District Engineer's point of view, and his preference, naturally, is for a durable structure needing little inspection and maintenance. To ensure that details of design adversely affecting future maintenance were not introduced, the former Great Western Railway initiated the practice of submitting drawings of all new works to the District Engineer concerned for comment before they were finally approved. This safeguard, which is being perpetuated by the Western Region engineers, enables the District Engineer to criticise any features in the design that he considers likely to increase maintenance costs.

A point not always appreciated is that the facility with which parts of a structure liable to more rapid deterioration than the main fabric can be renewed, without disturbing the latter, directly affects the cost of maintenance. On the selection of the most suitable materials for those parts will depend the frequency of such renewals. Strong non-corrosive fastenings should be fitted in the first instance, as they will increase the life of the structure as a whole and achieve economy in the long run.

Turning to the important subject of foundations, Mr. Cox deplores the rule-of-thumb methods of the past, and points out that a study of modern soil mechanics will enable the most suitable design of foundations to be selected. Costly subsequent settlement may thus be avoided, and in addition, the soil mechanics section—now a part of the Regional Engineer's office—will be able to advise the District Engineer precisely what settlement to expect when the full load of the building is imposed. Where exact clearances have to be worked to this may be of the utmost importance.

The next consideration in the paper is the selection of suitable materials to withstand the weather, smoke gases, and other adverse conditions, and thus keep down maintenance costs. The advantages and disadvantages of concrete, masonry, brickwork, timber and steelwork are all discussed, and modern improved design is instanced with diagrams of roof truss details. In the old design the rafters and ties are composed of twin angles back to back, and in the modern one a single heavier angle, allowing of all faces to be painted without difficulty. Useful notes on drainage follow, with particular reference to adequate inspection manholes and their relation to viaducts.

Modern design of floors, walls, and guttering, with diagrams comparing old and improved types, is instructive; glazed roofing and its facilities for inspection are illustrated—both verbally and diagrammatically—by practice at Paddington. The author stresses the need for intercepting chambers outside engine wash-out pits, with vertical gratings and sumps to facilitate drain clearing. A new problem is introduced by the dropping of fires without quenching, a practice that has disastrous effects on concrete pit-walls. If they are faced with firebrick or fire-resisting bricks these will have to be very well bonded into the walls.

Mr. Cox concludes by advocating close co-operation and exchange of views between the designers and maintenance engineers at all times during design, construction, and maintenance.

An Unusual American Accident

A REMARKABLE accident, reported briefly in our January 23 issue, occurred at Washington Union Station on January 15, when the "Federal" express of the New York, New Haven & Hartford and Pennsylvania Railroads, from Boston and New York, composed of 16 coaches, entered the station out of control and collided with the buffer-stops at 35 m.p.h. As a result, the train broke through into the main concourse of the station, demolishing the stationmaster's office and a bookstall, and was prevented from continuing into the main waiting room only by the collapse of the concourse floor. The "GG-1" class 4-6-6-4 electric locomotive fell through into the basement, followed by two coaches; one remained suspended on the brink of the opening, and most of the remainder of the train was derailed.

In the circumstances it is astonishing that there were no fatalities, and that the injuries to passengers, crew, and passengers waiting in the busy concourse for the most part were of a minor nature only. This was because of the presence of mind of the driver in sounding continuous warning signals when he found that his brakes would not work, of the train crew in warning passengers to brace themselves for the impact, of a signalman in warning the station officials, and of the station employees in clearing the concourse opposite the end of the platform concerned, all in a matter of one or two minutes.

The accident proves to have been caused by the angle cock of the compressed air brake connection between the third and fourth coaches having been turned almost completely off. There had been trouble with the brakes between Boston and New York, but on the Pennsylvania they had functioned normally as far as Baltimore, the last previous stop. As there had been other incidents of a similar nature on the New Haven line, to which the affected coach belonged, the possibility of sabotage was not lost sight of, and inquiries were instituted by the Federal Bureau of Investigation. It now seems clear, however, that the angle cock had been fitted in such a position that, with certain motions of the coach, it could come into contact with the bottom cross member of the buffer pocket portion of the underframe end construction. The Interstate Commerce Commission has therefore recommended an immediate inspection by all railways of stock fitted with tightlock or similar type couplers, and, in the event of such fouling being possible, its withdrawal from service until the fault has been corrected.

One of the most notable features of this accident was the speed with which the station reconstruction work at Washington was put in hand and completed; the accident happened within a week of the inauguration ceremonies of President Eisenhower, which lent special urgency to the work. The two coaches were lifted out of the basement and rerailed, but it would have been so difficult to lift the locomotive in this way, because of its weight, that it was lowered to the floor of the basement, there broken up and removed piecemeal. Meanwhile the floor of the concourse was reconstructed over the locomotive, the stationmaster's office and bookstall were rebuilt, and four days after the accident the station was restored to normal—apart from completing the removal of the locomotive—and the affected platform was once again in use.

E

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Interference with Signalling Circuits

March 24

SIR,—Your article on "Interference with Signalling Circuits" in the March 6 issue contains the following sentence:—

"While overhead lines continue in service there presumably must always remain certain classes of risk against which it is difficult to obtain complete safeguards, and no doubt the ideal, if one could afford it, would be to cable everything."

This sentence might give the impression that cabling will remove all inductive interference troubles, and as my paper to the Institution of Railway Signal Engineers is mentioned in the same paragraph, I feel that I may be associated with any such incorrect belief. I therefore desire to clarify the matter by pointing out that although cabling will reduce the electro-magnetic induction, sometimes substantially, this type of induction cannot be completely ignored even with cabled circuits.

Yours faithfully,

D. R. TURNER

30, Woodway Crescent, Harrow, Middlesex

Diesel and Steam Locomotives Compared

March 21

SIR,—With reference to Mr. Roger Boland's letter in your February 27 issue, I am on his side, but he did tell us about the New York Central "Niagara" 4-8-4 and its acceleration feat in his letter published on February 4, 1949. As Mr. Steurnagel remarked on the diesel controversy, "one swallow does not make a summer," but the same one counted twice rather implies a dearth of evidence. Again, why should he fear comparisons with steam engines "of small size and obsolete design"? Ancient and modern, they are a match, on the main line, for any diesel—at over 20 m.p.h.

Perhaps I may be permitted to take as instances a small and obsolete steam locomotive but *basically* designed, and a recent one, a British Railways Class "7," and compare them with a diesel up the Shap incline:—

No. of locomotive... ...	1159	70009	10000-10001
Year of run	1913	1951	1949
Type	4-6-0 (4 cyls.)	4-6-2 (2 cyl.)	0-6-6-0
Load behind engine ...	360 tons	470 tons	545 tons
Time Carnforth to summit (31·4 miles)	37¼ min.	35 min.	41 min. 12 secs.
Speed at summit	37½ m.p.h.	36 m.p.h.	33 m.p.h.
Weight of engine and tender	117 tons	141 tons 4 cwt.	(two) 255 tons
Tractive effort	24,446 lb. (85 per cent.)	32,160 lb. (85 per cent.)	41,400 max. (one unit)
Average d.b.h.p. over final 3¼ miles at average speed of	1,566 (46 m.p.h.)	1,548 (45 m.p.h.)	—

The loads behind the tenders of the two steam are nearly in the ratio of their respective tractive efforts. On such a basis, counting only one and two-thirds of the tractive effort of a single unit, after the rule of thumb for double heading, this gives a corresponding load for the diesel combine of about 1,000 tons; thus deprived of the large slice of its 3,200 h.p. that its own resistance demands, it might be still at Euston.

The twin-unit comprised 35 per cent. of the total moving load. It is hard to understand how the diesel-electric with a specific weight such as this one (178·5 lb. per h.p.), an average figure, managed to make its way on to the main line as a working proposition. But it did, and so the designer has little incentive to bring it down. Moreover the naive purchaser pays at least 2½ times the price of the comparable steam locomotive, and, so it would seem, cheerfully takes home an additional unit—just in case. Confined to the shunting yard or the hump, its real sphere, it could display admirably the undeniable advantages it has—up to 20 m.p.h.

Mr. Brian Reed lamented that British Railways had merely played at diesel traction, in any form, for line working. But, for that display of sound judgment alone, much should be forgiven them. If only they would proceed to stiffen this apparently good resolution—for the diesel merchant undoubtedly sells glamour, as well as sheer weight—by proving themselves right by means of the competitive trials with Mr. Ivatt's Pacific, No. 6256, foreseen in your January 2, 1948 issue.

Yours faithfully,

A. L. JONES

P.O. Box 546, Haifa

Cross-Country Services

March 13

SIR,—May I give support to the letter in your February 20 issue from Mr. Newton Brookes? You will be aware that I have repeatedly wearied you with similar pleas for more cross-country trains ever since the war ended, and particularly in regard to a day and a night through service between Scotland and the West of England.

I would suggest that it is not so much the "strong insularities of the nineteenth century" that have prevented so far any attempt to capture traffic between Bristol and the West of Scotland, as a prejudice in the Railway Executive against cross-country trains and through carriages, for operating reasons, thereby forcing passengers always to travel through London, instead of giving them a direct service from one end of the country to the other.

Yours faithfully,

MICHAEL PETO

Dundonnell House, by Garve, Ross-shire

Facilities for Tourists

March 20

SIR,—Regarding your report on the Cambridge District Stationmasters' Annual Luncheon, in the March 20 issue, allow me to comment on Mr. John Elliot's railway optimism by mentioning that it seems out of proportion that £1,000,000 is to be spent on railway ships in Scotland as reported in your February 20 issue. It is a strange contrast between Scotland and the South of England that in regard to the threatened closing of part of the railway system in the Isle of Wight, apparently soon to be an accomplished fact, no help is being given to keep the service intact. Again, in North Wales, the generosity given to Scotland is not in evidence, even on a small scale, to re-open the Llanberis branch—the rail gateway to Snowdonia—for tourists. Despite extensive publicity for the area the branch is kept closed, except for occasional trains.

Yours faithfully,

ROBERT W. LEWIS

"Beth-el," 104, Leggatts Way, Watford, Herts

I.C.I. EXHIBITS AT BRITISH INDUSTRIES FAIR.—The Plastics and Metals Divisions of Imperial Chemical Industries Limited will be represented at the Castle Bromwich section of the forthcoming British Industries Fair. Synthetic resins for use in foundries will be specially featured in the Plastics Section. The Metals Division will display various non-ferrous alloys in plates, sheet, strip, tube, wire, rod and extrusions, as well as wrought aluminium alloys in similar forms. This year, for the first time, the company will have a stand in the Textile Section of the fair at Earls Court.

THE SCRAP HEAP

Fourpenny Ride to Freedom

I have just come from the other side of the Iron Curtain on the "Fourpenny Train to Freedom," which refugees use on the last track of their arduous journey to the west.

It comes from the Friedrichstrasse in East Berlin, where the Hammer and Sickle flags are still flying at half-mast in Stalin's memory, to the Zoo station in the West, where any man can say just what he thinks of Communism. . . . And in this train, as in every other of the day, was a quota of men and women on the run.—*Harold Walton in "The Evening News."*

Question Master

When Mr. A. B. B. Valentine, a Member of the London Transport Executive, sat at the witness table at the Transport Tribunal in London on March 26, he entered his seventh day of examination and cross-examination. Up to that morning, he had already answered 2,367 questions relating to the application by the British Transport Commission to increase passenger fares. Many of the points that had been put to him he had answered at length, and he had seldom hesitated before replying.—***From the Press Association report of proceedings at the Transport Tribunal hearing of the B.T.C. Passenger Charges Scheme,*** 1953.

Before the Forth Bridge

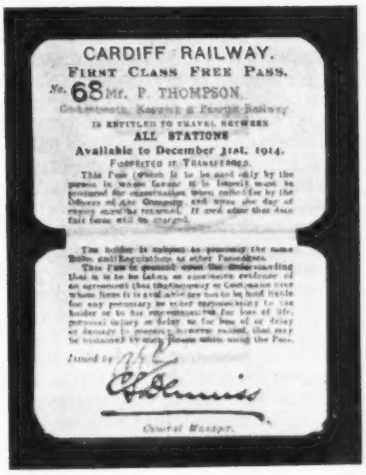
The ferry between Kirkcaldy and Leith has been let to Mr. John E. Watson, steam-boat manager, from Newcastle, on a lease of three years at the rate of £30 per annum. Mr. Watson is bound to give, at least, two passages a day from April 1 to September 30, inclusive, the fares not to exceed 9d. first cabin and 6d. steerage, with liberty to land and embark at Newhaven when wind and weather render it the most suitable place; but Leith is to be held as the port of the ferry on the south side. The Commissioners are bound, on their part, not to allow any competition between Kirkcaldy and Newhaven. —*From "The Scotsman" of March* 19, 1853.

Price Stabilisation

The nineteenth report of the British Railways (Southern Region) Lecture & Debating Society records that the society's annual subscription of 1s. has never been increased, despite rising costs, a course that has been justified by an ever-growing membership. The 1952-53 figure of 1,593 members was a record, and more than double the highest pre-war membership.

All Stations to Rhydyfelin Halt

The accompanying illustration shows a first-class pass issued for travel between all stations on the Cardiff Railway in 1914. The holder would have had only a limited scope for exercising the privilege, for the passenger service of the railway, maintained entirely by rail motors, extended for only 10¾ miles, from Cardiff, where the Rhymney Station was used, to Rhydyfelin Halt, in the direction of Pontypridd, to which town the company vainly sought to extend it. The Cardiff owned four stations and five halts. It was authorised in 1898 to improve access to the Bute Docks, Cardiff, and the passenger service, catering for the growing northern suburbs of Cardiff, began in 1911. After grouping the Great Western cut it back to Coryton Halt, to which it still runs, as the district beyond was amply catered for by the Taff Vale line.


CARDIFF RAILWAY.
FIRST CLASS FREE PASS.
No. 68 Mr. P. THOMPSON
IS ENTITLED TO TRAVEL BETWEEN
ALL STATIONS
Available to December 31st, 1914.
Countersigned if Transferred.
This Pass (which is to be used only by the person in whose favour it is issued) must be produced for examination when called for by the Officers of the Company, and upon the day of expiry must be returned. If used after that date full fares will be charged.
The holder is subject to and bound by the same Rules and Regulations as other Passengers.
This Pass is granted upon the understanding that it is to be taken as conclusive evidence of an agreement that the Company or Contractors over whose lines it is used are not to be held liable for any pecuniary or other responsibility to the holder or to his representatives for loss of life, personal injury or delay or for loss of or injury or damage to property however caused, that may be sustained by any person while using the Pass.
Issued by
Central Manager.

Hats Off

Referring to our recent paragraph on "Sidelights on Travel in Spain," a correspondent writes:—"Your 'Scrap Heap' of March 13 mentioned the effect on your correspondent of what to him was the unexpected politeness of a Spanish ticket collector who removed his cap as he passed through a restaurant car. It is my recollection that the same 'delightful gesture' is extended throughout Canada, and in the U.S. also as far as I know, by all travelling conductors, trainmen, porters, and other railway servants. It is thus a new-world courtesy rather than an old-world one. This gesture unhappily does not form part of railway tradition in Great Britain."

Outpost

Have I kept this crossing long, Sir ?
Nigh on thirty years or more,
Ever since I lost my arm, Sir,
Back in twenty-three or four.

Yes, it is a sort of outpost
Down this lonely little lane,
Though, maybe, it's not so lonely,
There's rare company in a train.

Every morning droves of cattle,
Red and brown and white and black,
Come to browse about the meadows
Till it's time to wander back.

Now and then my friend the lengthman
Brings me news from up the line
And the children, homeward wending,
Mingle their shrill tones with mine.

Branch Line Bill gives me a whistle
When he passes up and down,
I can hear his engine clanking
Half-way down to Romsey Town.

Why, we even have expresses,
When the "Swindon," flashing by
In a fevered, fluttering turmoil,
Makes the dust and ballast fly.

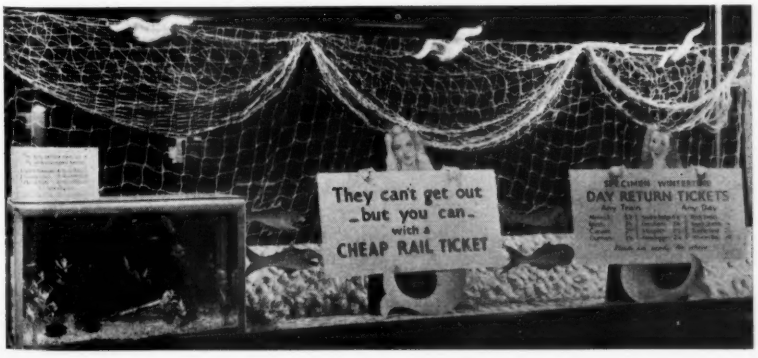
Then, of course, I've got my garden;
One arm's not as good as two,
All the same it's quite surprising
What one flipper still can do.

Sometimes life seems long and dreary
And I feel inclined to moan,
Then a bell rings in my cabin
And I know I'm not alone.

For my crossing keeps the line clear,
That's a job worth doing, too;
I don't think they do much better,
Even up at Waterloo.

A. B.

Fishing for Traffic



An illuminated tank containing seven varieties of tropical fish used in a window display at Newcastle Central to advertise cheap return tickets

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

NEW ZEALAND

Rimutaka Tunnel Progress

A New Zealand record is claimed for the 186 ft. driven at the Wairarapa end of the Rimutaka Tunnel during a recent week. The tunnellers worked in hard greywacke which provided good going. The tunnel has now been driven just under 1¼ miles at the Wairarapa end, and about ¼ mile in on the Mungaroa (Wellington) end.

SOUTH AFRICA

Bellville-Worcester Electrification

The first of the class "4E" electric locomotives has been sent to Cape Town to enable the training of drivers on the Cape Western System to begin. The section of the overhead equipment from Bellville to Eersterivier is ready to be energised and the substation at Eersterivier is ready to supply power.

Suitable ex-steam locomotive drivers have been selected and have been given preliminary training in handling of electric motor-coach trains. A pool of men is now available for training on electric locomotives. As soon as additional locomotives arrive, a few trains will be electrically hauled between Bellville and Worcester. The overhead equipment between Bellville and Worcester is almost complete and is now being finally adjusted and tested.

At first the service between Bellville and Worcester will be mixed, comprising steam- and electrically-hauled trains. The Electricity Supply Commission, which provides the power for this section, is able to supply all requisite power from the new Hex River power station and connections to the Administration's traction substation are now being made.

CANADA

New Works in Alberta

The Canadian Pacific Railway plans to spend $12,500,000 this year on capital works and maintenance in the Alberta Region.

New Type of Refrigerator Van

An experimental refrigerator van, designed by Canadian National Railways' research engineers to incorporate and test so many new features that it is almost a laboratory on wheels, is now being built for the railway by the Marine Industries Limited of Sorel, Quebec.

The van includes an underframe which, with the exception of drawbar mechanisms and safety devices, is entirely of aluminium, and a double purpose superstructure which will provide coldwall refrigeration and help to maintain uniform temperatures in all parts of the van by circulating a liquid coolant through the superstructure. There are adjustable bulkheads between the end bunkers and the main part of the van.

The superstructure, consisting largely of Monel metal pipes, not only supports the main body of the car, but also forms a circulating system for the liquid coolant, either brine, ammonium nitrate solution, or some other type. It is expected that this method will decrease differences of temperature between the lower and upper part of the van. The liquid itself is cooled in the end bunkers of the van which contain a mixture of salt and ice.

In winter, the same liquid will be used to warm the vehicle by being heated in a charcoal-burner beneath the van and forcing the liquid through the circulating system in the walls to provide warm-wall heating. During this period it will be possible to move the bulkheads from their normal positions to the ends of the van to provide extra space for consignments. Floor, walls, and roof are formed by insulated plywood panels bolted to the superstructure.

UNITED STATES

Interchange Traffic Facilities at Camden

In the past, passenger transit between Philadelphia and Atlantic City, Ocean City, Cape May, Melville and other east coast resorts in Southern New Jersey, has entailed the crossing of the Delaware River by Pennsylvania Railroad ferry to Camden rail-ferry station, and travel thence by Pennsylvania or Pennsylvania-Reading Seashore Lines to the coast. It has now been diverted to the Delaware River Authority's high-speed bridge transit line, which has a station almost beneath the Pennsylvania's Broadway Station at Camden, on the line to the ferry.

Interchange facilities between these two stations have been completed, including "up" escalators from the underground station to the concourse, rest and waiting rooms at street level, and from the concourse to the Pennsylvania high-level station, which has been enlarged and now has two island platforms 700-800 ft. long.

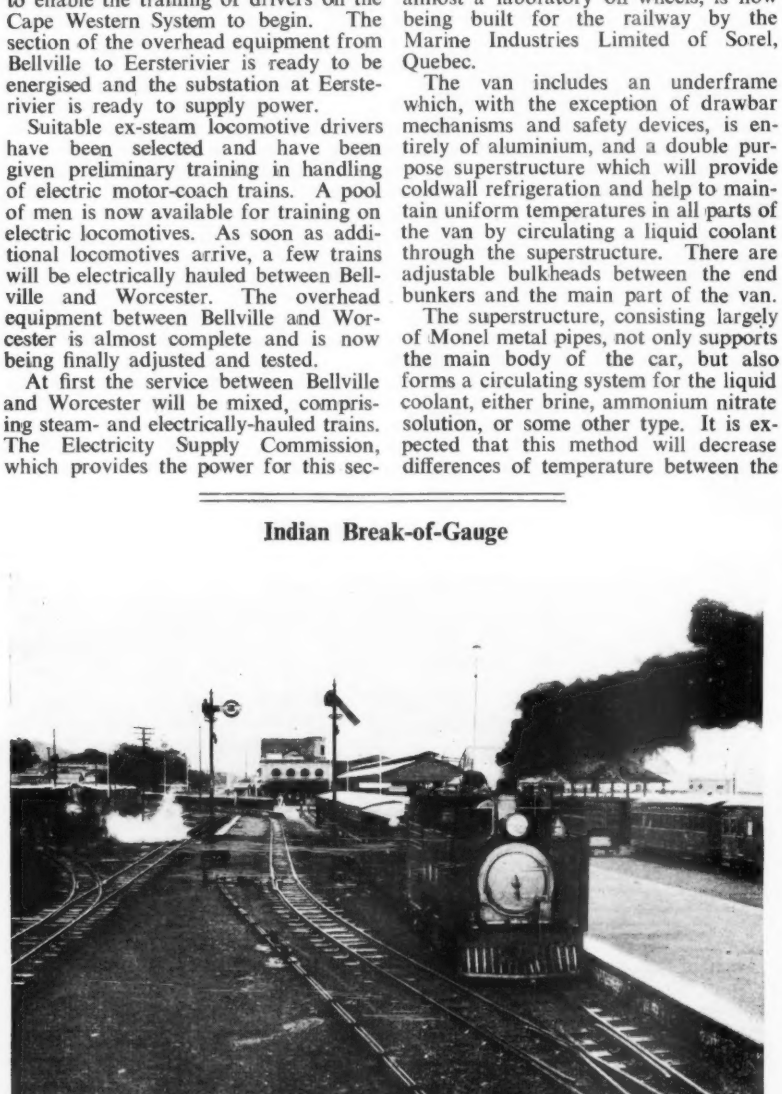
These arrangements have enabled the Pennsylvania to close its costly ferry and multi-platform ferry station on the Camden riverside, except that the Public Utility Commissioners insist on one platform being retained for the running of four trains daily. Traffic is mainly season-ticket and holiday.

Baltimore Station Modernised

The historic Camden Station at Baltimore, of the Baltimore & Ohio Railroad, has been modernised at a cost of $400,000. When built in 1852, it was one of the largest and finest stations in the U.S.A., and it has played a notable part in both B. & O. and national history. It was used by Abraham Lincoln as part of the roundabout and secretive route by which he entered Washington in 1861, and it was the scene of riots when the Sixth Massachusetts Military Regiment was passing through Baltimore to serve in the Civil War.

Modernisation, begun in 1951, has included the removal of some twelve coats of paint to expose the fine original brickwork; the ugly tower, with windows, cupola, and skylights, has been replaced by one of simple outline. The

Indian Break-of-Gauge



Photo] *[P. S. A. Berridge*

Train leaving Kalka, junction with the broad-gauge, for Simla on the 2 ft. 6 in. gauge Kalka-Simla branch of the Northern Railway, India

all-over roof over the platforms has been replaced by individual butterfly roofs for each platform, and concrete has replaced the brick of the platforms themselves. Extensive remodelling of the station buildings has provided additional space for mail, express, and baggage work, and also for the Baltimore Division Engineer's Department.

Chesapeake & Ohio Train "X"

The train which is being built for the Chesapeake & Ohio on the same lines as the Spanish "Talgo" train is not to be hauled by a coal-fired gas-turbine locomotive, as originally planned, but by a diesel-electric locomotive of special design which is being built by the Electro-Motive subsidiary of the General Motors Corporation. The builders estimate that a unit of 1,600 h.p. will supply sufficient power for the haulage of forty of the two-wheel articulated units, and for air-conditioning, heating, and lighting.

SWITZERLAND

Electrification of Jura Line

Electric traction began on the Saignelégier — La Chaux-de-Fonds metre-gauge line on March 13. The line belongs to the system owned and worked by the Chemins de Fer du Jura, and is 16½ miles long. It was opened in 1892. There are gradients of 1 in 25, and the average altitude of the line is more than 3,000 ft.; it reaches 3,260 ft. at La Chaux-de-Fonds, its southern terminus, and 3,220 ft. at Saignelégier. At La Chaux-de-Fonds the line connects with the Bienne—Le Locle line of the Federal Railways. Le Noirmont, some four miles south of Saignelégier, is the junction with the company's electrified metre-gauge line to Tramelan and Tavannes.

German Railbus Tests on S.F.R.

A diesel railbus of the German Federal Railways has been working experimentally over the steam-worked branch between Oberglatt, on the Zurich - Schaffhausen line, and Niederweningen, eight miles. The railbus accommodates third class passengers only and hauls a standard S.F.R. six-wheel coach. This experimental operation, which may continue until the end of April, enables one steam-hauled train to be withdrawn during off-peak hours.

Romanshorn-Friedrichshafen Ferry

The wagon ferry over the Lake of Constance between Romanshorn in the Swiss canton of Thurgau and Friedrichshafen in Württemberg had a busy year in 1952, with 17,000 wagons carried. Traffic included citrus fruit from Italy and from Spain *via* Italy to Western Germany; hardware, glass, and chemical products from Western Germany, coal from Poland, and timber from Finland, to Switzerland and beyond; and textiles and machinery from Switzerland to Germany. There are four passenger services each way daily, but passenger vehicles are not conveyed. Through passenger trains between Switzerland and Germany run through Austrian territory at the east end of the lake, *via* Bregenz. The ferry avoids passage through Austria. The ferry service between Rorschach in the canton of St. Gall and Lindau in Bavaria recently was suspended.

FRANCE

Automatic Machines for Metro Tickets

Municipal councillors are urging the Paris Transport Board to return to the old plan of selling books of single tickets instead of double tickets, each valid for two journeys as at present. While it is admitted that single tickets would be preferable, it is feared that the cost of the changeover would impose a heavy burden on the Metro finances. Meanwhile orders have been given for automatic machines to print and distribute the existing forms of tickets. Trials of these machines will be made at some stations before the summer. If they are satisfactory, the question of issuing single tickets may be reconsidered.

Tourist Fares

The National Railways have been offering experimentally tourist return fares entitling passengers to a reduction of 20 per cent on return journeys exceeding 1,500 km. (932 miles) and to a reduction of 30 per cent on return journeys exceeding 2,000 km. This arrangement is now to be made permanent. To passengers from abroad these tickets, if purchased in the country of origin, will be available all the year round, but there are some restrictions on availability if they are purchased in France.

Traffic and Receipts in 1952

Traffic conveyed by the S.N.C.F. in 1952 showed little change in comparison with the previous year. Passenger-kilometres went up from 28,200 million to 28,400 million, and *tonne*-kilometres decreased from 45,000 million to 44,300 million. In comparison with 1951, the variations in passenger traffic followed the usual seasonal trends; in fact, the curves for the two years were almost identical for long periods. Freight traffic in the early part of the year was clearly above that for 1951, but, after a peak in March, traffic fell off until the end of August. After a slight improvement there were decreases in the final months of the year.

Traffic receipts showed considerable increases under all heads. Passenger travel produced fr. 103,308 million in comparison with 83,604 million in 1951, an increase of 23·6 per cent. Freight traffic receipts rose from fr. 234,844 million to 271,737 million, a rise of 15·7 per cent. Total receipts, including baggage and small parcels reached fr.390,829 million against 330,357 million in 1951.

The increased receipts and the steady level of traffic would seem to indicate that little traffic was lost to rail as the result of the rates and fares increases during 1952. It is estimated that the S.N.C.F. deficit in 1952 will be about fr. 80,000 million but this sum will be largely offset by the compensatory payments to be made by the French Government in respect of permanent way renewal and maintenance, referred to in the August 15, 1952, issue.

FINLAND

Progress in 1952

The carrying capacity was not fully used last year, even summer traffic being light, partly because of disappointing external trade, especially as regards the paper industry, and partly because of restrictions imposed on goods traffic during the Olympic Games. Unfortunately the Games did not bring about the traffic which the railways had expected.

The recently completed line from Orivesj to Jämsä, 60 km. in length, opened to traffic last October, comprises eleven bridges, including that of Sulkusalmi which is the highest of its type in Finland. Other works, such as track renewal and doubling, were continued according to plan. As regards safety installations, mention should be made of the introduction into service of the first relay signalbox at Leppävaara, near Helsinki.

Power and Rolling Stock

To meet the traffic requirements anticipated at the time of the Olympic Games, all passenger stock was reconditioned. New coaches were constructed in railway workshops. A series of third class coaches completed just before the Games comprises either 72 seats or 60 seats and a compartment for sick persons. Eighteen sleeping cars were constructed.

Some 400 wagons were delivered by railway workshops, including one 12-axle wagon with a capacity of 120 *tonnes*.

IRELAND

Special for Emigrants

A special train will run from Belfast to Cobh on April 12, conveying one of the largest parties of emigrants ever to leave the country since 1927 for Canada. The train will leave Belfast at 8.50 a.m. and call at Portadown and Dublin, reaching Cobh at 4.50 p.m. The passengers will embark on the *Georgic* for Halifax, Nova Scotia. Customs Officers from Cobh will go to Belfast and travel back with the party so that baggage examination will be facilitated.

Mechanical Staff Exchangers on C.I.E.

The new-type mechanical staff exchangers, installed last year on the Dublin-Galway line, have proved so successful that the C.I.E. has decided to use them on the Rosslare-Mallow line also.

They enable staff exchanges to be made at 60 m.p.h. with greater efficiency than possible before. The installation will begin within the next few weeks, and it is hoped that the exchangers will be in operation by June.

New Roof at Sheffield Victoria Station

Design incorporates glazed awnings supported by prestressed concrete beams

THE roof spanning the main-line platforms at Sheffield Victoria Station was constructed during the period 1850-1880; wind bracing was added in 1912. It was covered partly with glass and partly with boarding and slates, and had a lantern light in the ridge. There were 33 trusses at 12 ft. 6 in. centres, each truss having a span of 84 ft. 6 in. between supports, the rise being 16 ft. The total length of platforms covered was 400 ft. The vertical struts and ridge pieces of the trusses were of cast iron, the top chord was of wrought iron angles, and the remainder of wrought iron flats. Pin joints were used throughout. The diagonal wind bracing consisted of wrought iron angles and was

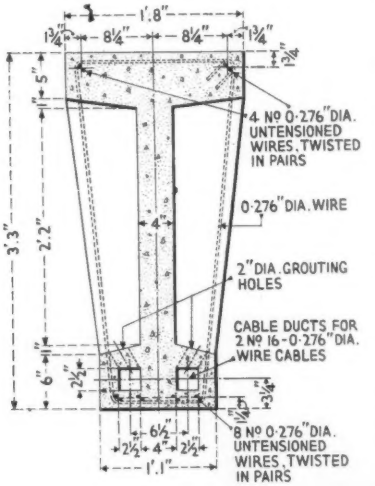


Fig. 1—Cross-section of pre-stressed concrete beams

placed in each of the three end bays and the two centre bays.

During the 1939-45 war the roof was subjected to blast from several H.E. bombs which dropped within 100 yd. of the structure. On Monday, September 24, 1951, four trusses at the western end of the station collapsed and failure was traced to a concealed fracture in the cast iron ridge piece of one of the trusses concerned.

As a result of a detailed investigation a decision was taken to dismantle the whole structure. Temporary awnings over the platforms were provided until such time as a new permanent cover could be constructed. The temporary awnings provided over platforms 3 and 4 consist of a framework of standard tubular scaffolding, 2 in. nominal diameter, with a covering of Bix Six asbestos cement corrugated sheeting. The work of demolishing the old roof and the provision of the temporary awnings was completed before the end of January, 1952.

A number of alternative designs for the permanent covering was given very careful consideration and the design adopted is one which incorporates prestressed concrete beams spanning between the existing walls and carrying over the station platforms fully glazed suspended awnings of light construction.

Beam Sections

Fig. 1 shows a cross-section of the prestressed beams, which weigh approximately 12½ tons each and are located generally at 25 ft. centres. The overall length is 87 ft. 9 in., the depth of the section being 1 ft. 9 in. at the ends and 3 ft. 3 in. at mid span. The concrete is prestressed with 0·276 in. dia. high-tensile steel wire in two 16-wire Magnel Blaton type straight cables. Sockets are cast into the beam to take the steel suspension rods.

Fig. 2 is a cross-section showing the prestressed beams supporting the awnings over the platforms. The steel framework of the awnings consists of arched ribs, purlins and facia. The arched ribs are 9 in. × 4 in. R.S.J.s about 25 ft. 6 in. long over the down platform and about 23 ft. long over the up platform.

The purlins are of 12 in. × 5 in. R.S.J.s spaced at about 8 ft. 3 in. centres. The facia, which is 5 ft. deep and inclined at a slope of 1 in 5, has a 4 in. × 3 in. × ⅜ in. angle as a continuous bottom member, the corresponding top member consisting of a 12 in. × 3½ in. channel with its lower leg stiffened by a 4½ in. × 1½ in. × 5/16 in. bent plate. The facia is framed by three intermediate systems of bracing per bay of 25 ft. All connections, steel to steel, are made by welding.

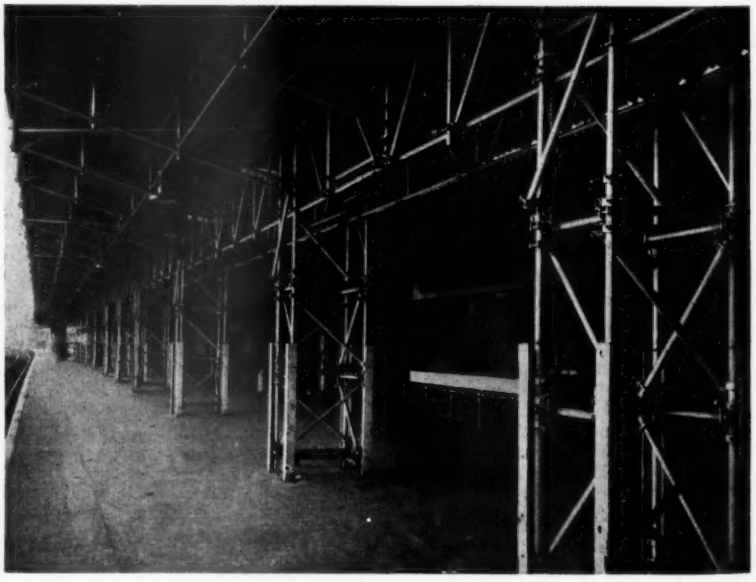
A parcels bridge, spanning the platforms and tracks, divides each awning into lengths of approximately 211 ft. and 177 ft. The two centre ribs in each length are built into the wall and so that movement due to expansion will take place towards both ends of each length, the ends of the remaining ribs are linked to built-in 3 in. × 3 in. × ⅜ in. tees. Galvanised steel gutters are supported by tee sections welded to the inner purlins.

The awnings, including the facia, are completely covered with patent glazing consisting of ¼ in. thick rough-rolled wire-woven plate glass supported on extruded aluminium alloy section glazing bars, bolted to the steel framework.

Suspension of Awnings

Each rib is suspended directly below the prestressed beam by four hangers made from 1⅜ in. dia. rods, screwed into the beam sockets. The length of each hanger can be adjusted by means of a turnbuckle and any movement of the awning due to temperature change is provided for by fork coupling at each end of the rod. The suspension members are protected by non-corrodible sheathing.

When electrification of the lines takes place the overhead electrical equipment will be suspended from certain of the prestressed beams, which have been designed to take the additional load. The principal advantages of the design as adopted are the ease of maintenance generally and the freedom from column



Temporary canopy over down platform after collapse of part of roof

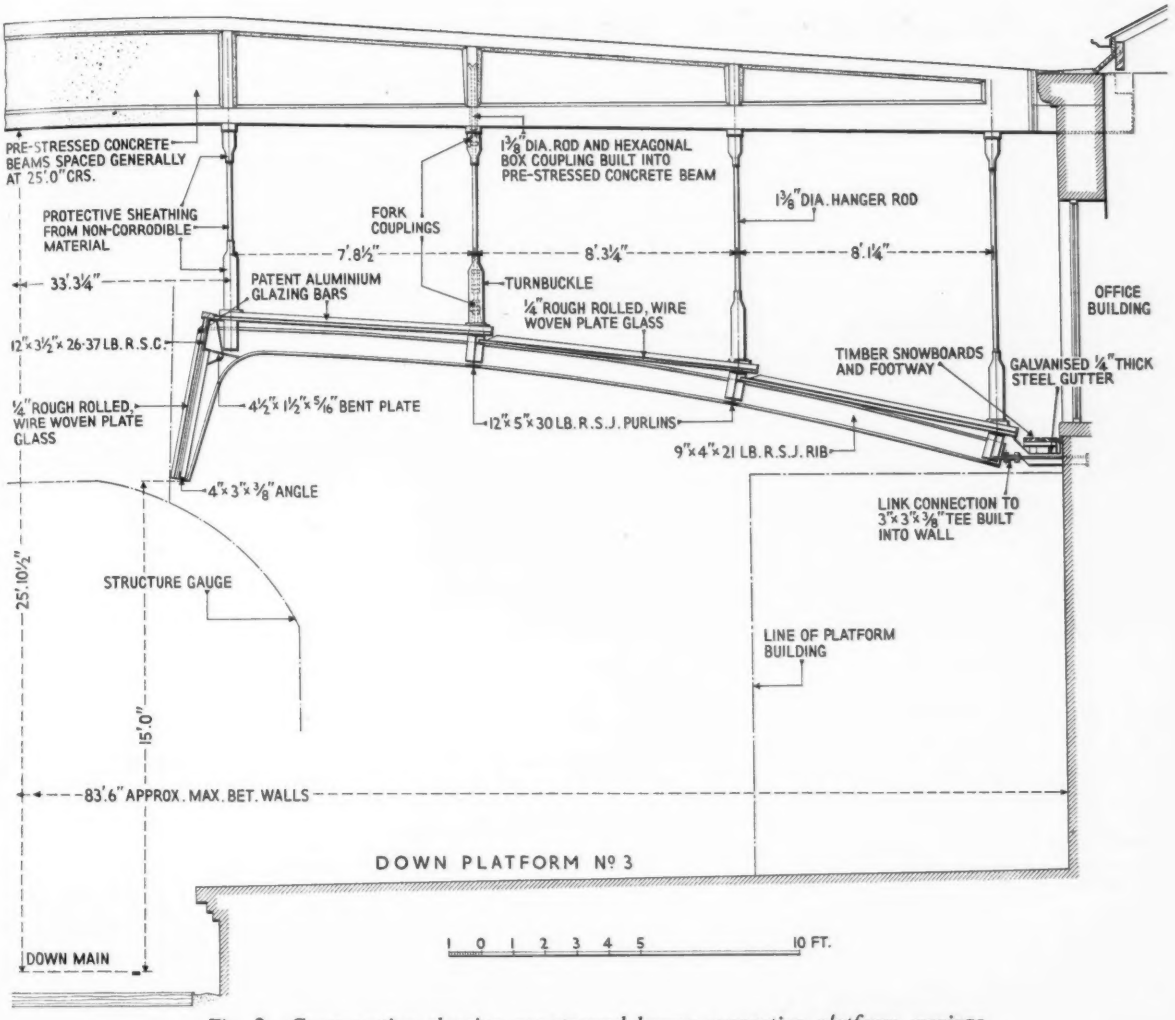

PRE-STRESSED CONCRETE BEAMS SPACED GENERALLY AT 25'.0" CRS.
PROTECTIVE SHEATHING FROM NON-CORRODIBLE MATERIAL
1⅜" DIA. ROD AND HEXAGONAL BOX COUPLING BUILT INTO PRE-STRESSED CONCRETE BEAM
FORK COUPLINGS
1⅜" DIA. HANGER ROD
7'.8½"
8'.3¼"
8'.1¼"
33'.3¼"
PATENT ALUMINIUM GLAZING BARS
TURNBUCKLE
¼" ROUGH ROLLED, WIRE WOVEN PLATE GLASS
OFFICE BUILDING
12"x3½"x 26·37 LB. R.S.C.
TIMBER SNOWBOARDS AND FOOTWAY
GALVANISED ¼" THICK STEEL GUTTER
¼" ROUGH ROLLED, WIRE WOVEN PLATE GLASS
4½"x 1½"x 5/16" BENT PLATE
12"x 5"x 30 LB. R.S.J. PURLINS
9"x 4"x 21 LB. R.S.J. RIB
4"x 3"x ⅜" ANGLE
LINK CONNECTION TO 3"x 3"x ⅜" TEE BUILT INTO WALL
25'.10½"
STRUCTURE GAUGE
LINE OF PLATFORM BUILDING
15'.0"
83'.6" APPROX. MAX. BET. WALLS
DOWN PLATFORM Nº 3
1 0 1 2 3 4 5 10 FT.
DOWN MAIN

Fig. 2—Cross-section showing pre-stressed beams supporting platform awnings

supports on the platforms, which latter advantage was also a feature of the previous high-level roof.

The design of the new roof was carried out under the supervision of Mr. J. I. Campbell, M.Inst.C.E., Civil Engineer, Eastern Region, and the contract has been let to Samuel Butler & Co. Ltd. The contractors concerned with the work of demolition and erection of temporary roofing were as follow:—

Demolition of old roof ...	Samuel Butler & Co. Ltd.
Provision and erection of tubular scaffolding	Mills Scaffold Co. Ltd.
Provision and erection of asbestos sheeting	Boddy Roofing Co. Ltd.

WINDSCREEN WIPER EQUIPMENT.—Displays on the stand of Trico-Folberth Limited at the forthcoming British Industries Fair will include various heavy duty windscreen wipers designed for public service vehicles and railway rolling stock. These items will be seen operating on curved and flat screen glass, both with compressed air and vacuum power.

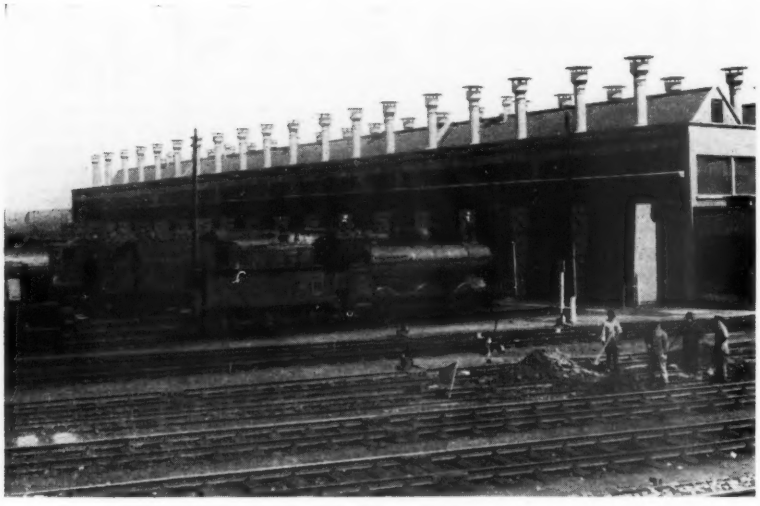
FUSED TAPPED CABLE TRUNKING.—A new fused tapped cable trunking system designed to meet the need for a completely flexible distribution system feeding low-consumption equipment has been developed by the General Electric Co. Ltd. The method employed makes it possible to dispense with multiple runs of conduit and distribution boards, since each outlet is equipped with a fused tap-off unit giving individual protection. These units consist of heavy steel cases inside which are 20-amp. porcelain fuses with H.R.C. cartridge or rewireable fuse holders, and, where necessary, a 3-way neutral connector.

RAILWAY DEVELOPMENT IN THE 19TH CENTURY.—Railway development in the 19th century was recalled by Mr. O. S. Nock, Chief Draughtsman of the Westinghouse Brake & Signal Co. Ltd., during the course of a lantern lecture on the West Coast route at the March meeting of the York Railway Lecture & Debating Society. Mr. A. P. Hunter, Divisional Operating Superintendent, North-Eastern Region, presided. The speaker described in detail the opening up of the various constituent companies which were later merged into the West Coast route from London to Edinburgh and Aberdeen. He produced many interesting facts and amusing stories in connection with the railway races of the 1890s, and gave reminiscences culled from his own extensive travels on the footplate over the route in question. A vote of thanks to the speaker and the Chairman was proposed by Mr. H. M. Lattimer, District Operating Superintendent, York.

CHRISTMAS TREE DISPLAYS AT SCOTTISH STATIONS.—Public response to the Christmas Tree displays at the terminal stations in the four principal cities in Scotland showed continued generosity, the 1952-53 donations, totalling just over £1,410, being a slight increase over the 1951-52 contributions. Cash distributions have been made to hospitals and to railway and local charities, the sums involved in the four areas being: Glasgow, £605; Edinburgh, £395; Aberdeen, £320; and Dundee, £90. At the same time 4,814 gifts of toys, books, and other comforts collected at the tree displays were distributed to local hospitals and institutions.

Schaerbeek Depot, Belgian National Railways

Extensive installations including large motive power depot, marshalling yard, sidings and repair sheds



New shed accommodating 100 locomotives

SCHAERBEEK DEPOT, Belgian National Railways, is situated to the north of Brussels on the main line to Antwerp, and at a focal point of the system, as the accompanying map makes clear. In six air raids in 1944, Allied bombing destroyed the locomotive sheds and rendered unusable 95 per cent of the marshalling yard. The present layout and equipment are therefore modern.

Spreading northwards from Schaerbeek Station, for a distance of over three miles, as far as Haren North, the depot comprises a locomotive shed and workshop, a freight marshalling yard, a goods station and transhipment shed, electric and steam coaching stock sidings and repair sheds, a wagon repair depot, and a large permanent way depot.

The permanent way depot, situated at the northern end of the yard, is exceptionally well laid out and equipped with overhead traverser cranes, for easy loading of rails and other materials.

Size of Locomotive Shed

The new steam locomotive shed has been constructed to house about 100 locomotives. There are nineteen tracks in the shed, and although at first sight they appear to run the full length, they are divided in the centre, where the administrative block of offices, drawing office, boiler room and workshops are situated. The northern end is generally used for undertaking heavier running repairs.

It is the practice to wash out the boilers of locomotives every ten days, and a warm water washing plant has been installed. It is found by this means that the period of time a locomotive is out of traffic for boiler wash-out can be materially reduced without detriment to the engine.

The work of the hundred or more members of the shed staff is highly organised. Incentives are offered to improve output, but overtime is not encouraged and is rarely worked. Each period of three months is taken as a whole and time is worked on the basis of a 48-hr. week, so that if a man works extra hours in one week he is given time off in lieu, within the three-monthly period.

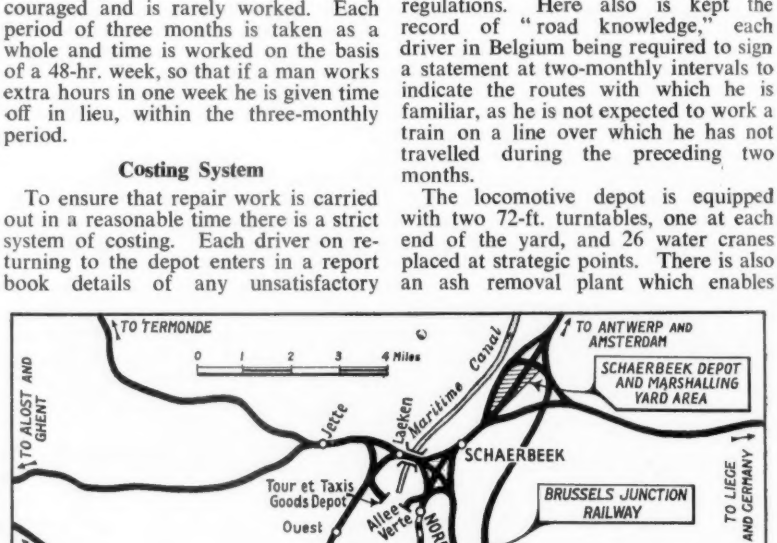
Costing System

To ensure that repair work is carried out in a reasonable time there is a strict system of costing. Each driver on returning to the depot enters in a report book details of any unsatisfactory feature he has observed in the working of his engine. The report is investigated by the examiner who details the repairs which he considers necessary. A copy of his report is sent to the costing office, where there is a printed schedule of repairs from which the estimated time and the cost of materials can be ascertained. In the costing office a graph is prepared which indicates all locomotives out of traffic from day to day, and shows the estimated time necessary to effect the repairs, and thereby gives an indication of the time at which the locomotives may be expected to be released to traffic.

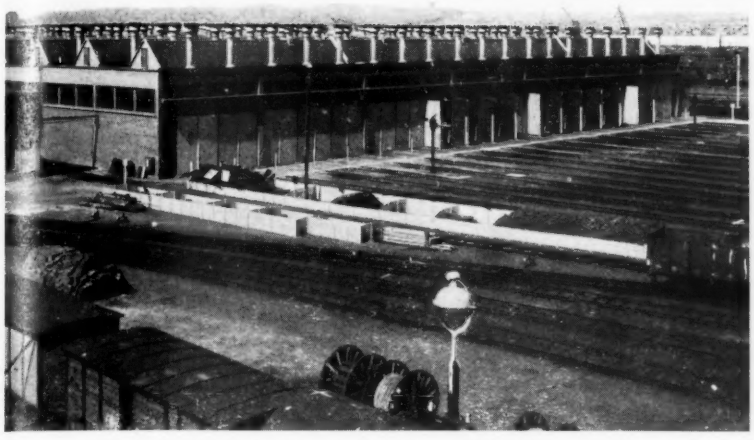
A member of the repair staff is made responsible for each item of repair to a particular locomotive, and when it recurs it is again allocated to him. This practice is found to produce a good standard of workmanship and fastens responsibility for failure on to the individual.

Adjacent to the shed is an enginemen's training school, where each driver and fireman spends two hours a month learning about new equipment which may have been installed, and refreshing his memory on signalling, and rules and regulations. Here also is kept the record of "road knowledge," each driver in Belgium being required to sign a statement at two-monthly intervals to indicate the routes with which he is familiar, as he is not expected to work a train on a line over which he has not travelled during the preceding two months.

The locomotive depot is equipped with two 72-ft. turntables, one at each end of the yard, and 26 water cranes placed at strategic points. There is also an ash removal plant which enables



The network of lines serving Brussels, showing the position of Schaerbeek Depot and Yard



Another view of the locomotive shed

enginemen to dispose of their ashes into pits built in the form of a traverser equipped with grabs, allowing the ash to be loaded into wagons at regular intervals for despatch to tipping sites. A coal mixing plant, capable of producing 2,000 tons of standard fuel a day, has also been installed. It consists of four wagon hoists, which feed through hoppers a system of conveyor belts and mixing drums. By this means standard fuels are produced, which are a great aid to efficient and punctual operation, and to achieve greater benefits drivers receive a bonus for good running and fuel economy.

Marshalling Yard

Adjacent to the locomotive depot at Schaerbeek and connected with it by numerous separate locomotive access roads, is the unidirectional marshalling yard, one of the most important in Belgium. Although the layout allows trains to be received from all directions, most of the traffic comes from the north, specially from the Port of Antwerp, and the yard is therefore constructed from north to south.

There are 31 reception sidings (Section "A") which feed a grid of 53 marshalling sidings (Section "B") by means of a 15-ft. hump. Two tracks pass over the hump, as not only is this desirable with such a large reception yard but it enables marshalling to take place continuously, one train beginning to move immediately the previous train has been completed.

In addition there is a yard (Section "C") of 26 long through roads, where trains needing only to change locomotives can be held. These sidings are also required for the storage of wagons waiting orders and specially as a concentration point for empty wagons, for in a city such as Brussels where there are several large goods depots and many private sidings and riverside wharves, apart from the proximity of the Port of Antwerp, such a facility is essential.

Overhead electric wiring is provided in the arrival and departure sections of the yard to obviate difficulty in handling the many freight trains now hauled by electric locomotives. With the bringing into service of the new Brussels junction line forming a direct link between the north and south of the city, the number of electrically-operated freight trains is becoming greater.

Most of the 65 to 70 trains entering the yard daily pass over the hump. This represents a daily average of 3,000 wagons—the peak figure is 3,300—of which 2,500 are humped and the remainder dealt with in "C" Section. Half of this total is subsequently disposed of by local services, which include trips to the port of Brussels and the railway depots in the Schaerbeek area. The other half goes forward on long-distance services.

In this yard traffic is marshalled for approximately 100 destinations; each of the 53 sidings is allocated either to a particular destination or formation centre, or to a number of destinations on a line of route. To assist this process "B" Section is divided into three parts, each of which is allotted a shunting engine. A fourth engine performs general duties in Section "B" and works when required in Section "C" in connection with the formation of trains of empty wagons.

Traffic Handled

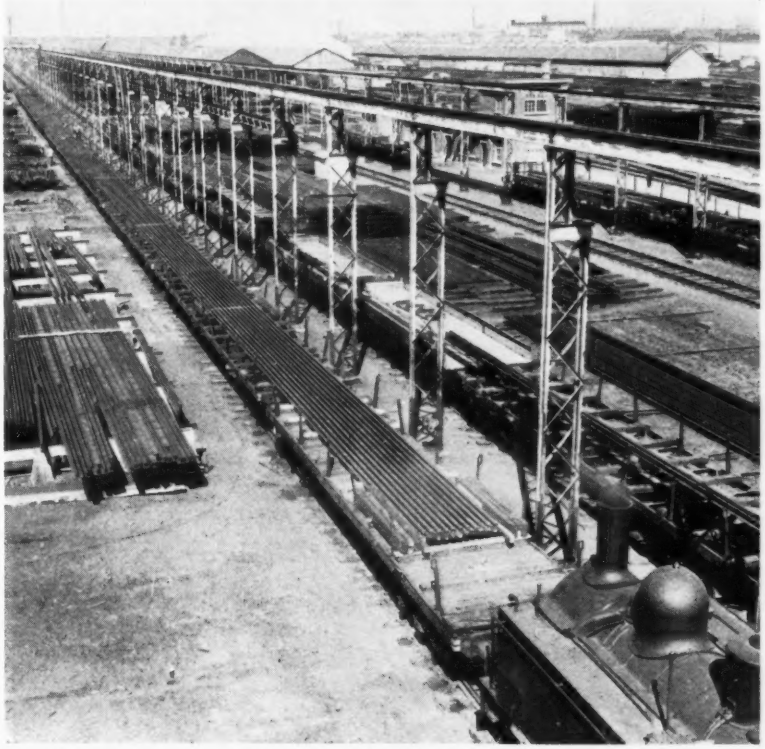
On an average day the local traffic handled in the yard is as follows:—

Locomotive depot	120 wagons		
Repair shop	100	,,	
Permanent way depot ...	50/60	,,	
Port of Brussels	150	,,	(mainly coal and steel)
Haren North	300	,,	

Haren North serves 230 private sidings with twenty-five miles of track on which traffic operation is performed by seven privately-owned locomotives.

The yard is open normally from 6 a.m. on Monday to 6 a.m. the following Sunday. During this time the full complement of locomotive power is in service. An engine is, however, available for special duties in Section "C" from 6 a.m. to 2 p.m. each Sunday.

Schaerbeek Yard is under the control of a yardmaster, assisted by three assistant yardmasters, who between



Permanent way depot

them provide continuous supervision. The work is systematically organised and based on a graph constructed according to the known capabilities of the yard, and on this the timetable is constructed.

Experience has shown that it takes 1 hr. 17 min. to dispose of the average train after it has arrived in the yard. An hour of this time is required for the preparation of the train before shunting, twelve minutes for passage over the hump, and five minutes for such items as "pushing down" roads and correcting wrong shunts. The time required for preparation of the train includes uncoupling, making out "cut-lists" and transmitting the information to the staff concerned with re-marshalling the train. As all freight trains in Belgium are fitted with automatic brake, uncoupling involves disconnecting brake pipes as well as unhooking the wagons, and brake wires have to be released on every wagon.

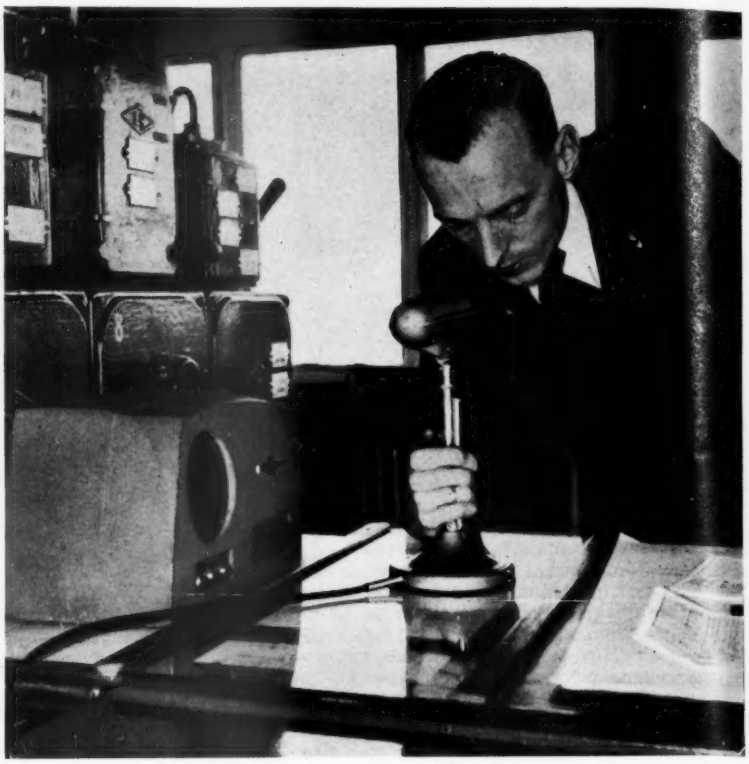
The servicing of the two locomotives used on the hump is allowed for by suspending operations from 6.30 a.m. to 8.30 a.m. each day, except in the winter months when it is found desirable to provide relief engine power to cover this period.

Route-setting

The present control tower, situated beyond the hump, was opened twenty years ago, and is equipped with a system of electrical switches for route setting. The first eight of these are automatically pre-set from the pointsman's cabin at the hump. The remainder are operated from the tower in accordance with information shown on the "cut-list." All tracks and points leading to the marshalling sidings are track-circuited as far as the clearance point, and the operation of the points is almost instantaneous. Retarders have not been provided in this yard, where the practice is to use skids, placed in groups of four every five yards from the foot of the hump for a distance of 40 yards, and after use returned immediately for re-use. Normally twelve shunters are employed for wagon braking on each turn of duty; instructions are given to them by loudspeakers operated from the Control Tower.

Special attention has been given to lighting the hump at night, a tower 130 ft. high having been constructed and equipped with electric lamps giving a lighting intensity of 6,000 watts.

The locomotives used on hump duties are Westinghouse-brake-fitted 0-8-0 tank engines, equipped with radio telephones, which enable the control tower to be in constant and instantaneous communication with the drivers, who no longer have to rely on signals. This greatly speeds up the work, in particular during inclement weather.



Instructions being given by radio telephone in control tower to driver of hump shunting engine

Working in Fog

The yard, close to the river and surrounded by low hills, is considerably affected by fog, which in the past frequently brought work almost to a standstill. It is claimed that since the introduction of radio control, the effect of fog on yard operations has been almost negligible, although at such times there is an increase in the amount of damage to wagons and their loads during passage over the hump, which is the highest in Belgium. The average figure for such damage over a period of years is approximately two wagons damaged for every thousand passing over the hump. Throughout the whole of the Schaerbeek area, where twelve shunting engines are in regular use, mishaps average two per week.

To improve the engine turnround time, a train despatching office has been established in the yardmaster's office, and is in direct telephonic communication with all the strategic points in the yard and neighbourhood.

The train despatcher keeps a running graph of all the work performed, and is responsible for deciding alterations to the booked working, as it is considered essential that no engine should return to its depot light and engines usually work out 1½-2 hr. after arrival. His assistant is responsible for the preparation of current information on the loads of trains arriving at and leaving the yard, the number of wagons passed over the hump, train by train, and the number of wagons waiting despatch to destinations. A check is also kept on wagons held in the yard for more than the normal transit time.

NEW LOUDSPEAKERS AT GLASGOW CENTRAL.—To improve the sound distribution of announcements over the public address system at Glasgow Central Station, concentric diffuser type loudspeakers have been installed on the concourse and at the station entrances. The new loudspeakers, shaped in the form of a bowl and designed to give horizontal sound distribution over a radius of 360 deg., were manufactured specially for this installation by Goodmans Industries and are the first of the type to be used externally on British Railways. The area of the concourse is covered by eleven units suspended from the roof girders, and spaced so as to give even overall distribution. New amplifying equipment, control panel, and microphone were supplied by the General Electric Co. Ltd.

WESTERN REGION FIRST AID AWARDS.—Mr. K. W. C. Grand, Chief Regional Officer, Western Region, presented the trophies and prizes gained at the recent district ambulance competitions, and also a number of long-service efficiency awards, to members of the London "A" District at Paddington on March 19. Mr. W. T. Geden, Stationmaster, Paddington, presided. The presentation of class awards was made by Mr. N. H. Briant, District Operating Superintendent. Other officers present included Mr. Gilbert Matthews, Operating Superintendent; Mr. C. Furber, Commercial Superintendent; Mr. R. Burgoyne, Regional Staff Officer; and Doctor C. T. Newnham, Regional Medical Officer.

Dealing with East Coast Floods

Emergency measures by civil engineering, operating, and locomotive departments in connection with February floods

Carriage sidings at Cleethorpes, with track damaged by pieces of concrete from sea wall

THREE geographical areas of British Railways were affected by the floods in early February: the Western (Operating) Division of the Eastern Region, namely certain Lincolnshire coast lines of the former G.C.R. and G.N.R.; secondly, the Eastern Division of the Eastern Region, namely, former M.G.N.R. and G.E.R. lines on the coast of the Wash, Norfolk, Suffolk, and Essex and near the Thames Estuary, and parts of the Tilbury Section; and thirdly, some former S.E.C.R. lines of the Southern Region adjoining the Thames Estuary, in Kent. Only one railwayman, a signalman returning from duty at Trimley, on the Felixstowe branch, lost his life.

In the Western Division of the Eastern Region, the north-west gale on January 31 caused many reports of minor damage throughout the Division, but gave no inkling of the havoc which the combined gales and high tides were to cause a few hours later. First reports from about 1 p.m. spoke of obstructions blown across running lines, signal lights blown out, and posts down. Soon after 6 p.m. came the first news of floods, the tide travelling southwards down the Lincolnshire coast, the surge at the mouth of the Humber preceding that further up the estuary, and at Mablethorpe and Sutton-on-Sea.

The type of damage varied. At New Holland the Pier Station was put out of use by the impact of a New Holland to Hull ferryboat that had broken loose. At Immingham Dock (under the control of Docks & Inland Waterways Executive) flooding of the power house put coal shipping hoists and the locomotive turntable out of commission. The water supply at Immingham Loco. Shed was contaminated by salt water. The steam passenger service between Immingham Dock and Grimsby was suspended for some days.

On the Grimsby—Cleethorpes line, the sea was reported about 5 p.m. on January 31 to be over the track 600 yd. from Cleethorpes Station and soon the line was declared unsafe; the concrete sea wall had entirely disintegrated in several places, and adjacent carriage siding were seriously flooded, pieces of concrete weighing up to 5 cwt. from the sea wall having twisted the rails.

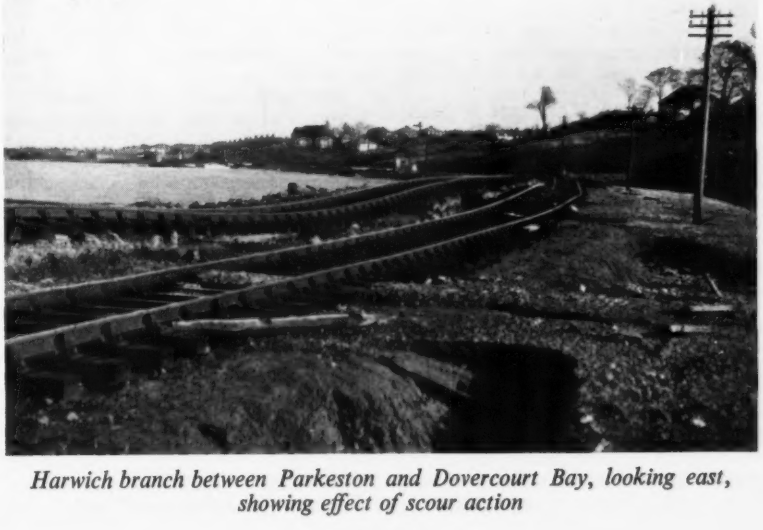
In the Mablethorpe—Sutton area, the experience of Cleethorpes was repeated with more widespread floods an hour later half way down the Lincolnshire coast, and at 7 p.m. on the Saturday evening (January 31) came the first report that the line was under water at Sutton. It soon transpired that access was possible within a mile of Sutton from the south or into Mablethorpe Station from the north. On February 4 there were still four miles of track under water; and next day the sea washed inland again though without causing fresh damage.

By the afternoon of February 6, the line was available for freight working at 5 m.p.h. from Mumby Road almost into Sutton; this was extremely important, as a heavy tonnage of slag had begun to pass by rail from the Scunthorpe area for sea defence works.

Problem of Recurring High Tides

The Sutton—Mablethorpe section which, with the sea walls down, was still out of commission and on February 10 still was being flooded by each high tide. The restoration work was hampered by the recurrence of exceptional tides late on February 11 and 12, when a rocket warning system was introduced by the local authorities to call in the workers in emergency. Although the yellow (first warning) rocket was fired twice, no real trouble fortunately developed. It was, however, not until midnight on March 1 that the Operating Department took possession.

Although the Mablethorpe—Sutton



Harwich branch between Parkeston and Dovercourt Bay, looking east, showing effect of scour action

area was the worst affected in the Western Division, the limitation of passenger services at this time of year was not serious.

Movement of Coast Defence Material

Repairs to the sea defences entailed the movement of much slag, and concentration on this aspect enabled the Catchment authorities and the contractors working under the direction of the Ministry of Agriculture & Fisheries to be kept fully supplied.

Apart from the flooding difficulties domestic to the Western Division, the greater disaster elsewhere in the Eastern Region called for special assistance and repair material began to pass immediately. Arrangements were made for the line from Wells Harbour and flooded the station and yard to 4 ft.

Thereafter much flooding occurred at various points around the coast of Norfolk, Suffolk, and Essex, and in the Thames Estuary, as recorded in this journal. At Harwich, Parkeston Quay was isolated, and the wagon ferry terminal was put out of action; and on the Tilbury Section, in the breach of the main line between Benfleet and Leigh and the flooding at Tilbury, a great industrial area was flooded. Higher up the Thames, part of the Poplar and Millwall area was flooded.

One hundred and forty-five miles of railway were flooded or cut off. The flooded areas were thick with a variety of floating objects such as signal posts, and had deposited them away from the track. At the coastal depots flooded or cut off there were impounded over 600 coaches and over 100 engines.

The worst case was Shoeburyness, on the Tilbury Section, with 326 coaches and 35 engines fitted with A.T.C. and incapable of substitution by borrowing from elsewhere. With very little reduction in passenger travel expected and much increased movement of freight it was important to get engines and stock quickly out of the flooded area. Risks were taken over track which would be normally regarded as unsound. The biggest movement was from Shoeburyness on the Tuesday, when at low tide columns of three engines and engines heading empty trains ran slowly through a quagmire safely to Benfleet.

Wagon ferry terminal at Harwich shortly before completion of repairs. The ramp was forced upwards by the berthed ferry "Essex" being lifted on the flood tide

despatch of millions of sandbags from the Barby War Department Depot, and up to February 21, 106 special trainloads of repair material were sent from the Division.

Unusual Flood Movement in Fens

In the Eastern Division of the Eastern Region the first trouble was curiously enough not on the coast at all but inland on the River Ouse six miles from its mouth at Magdalen Road, where the tide runs up as far as Denver Sluice. At 7.30 p.m. on January 31 the tide reached the banks in seven places and swept over the main line from London to King's Lynn. Within a few minutes water was level with the deck of the railway bridge at West Lynn and was flooding the marshalling yard and station at South Lynn. Breaches occurred between Hunstanton and Heacham and at three places between Heacham and Wolferton. A little later the sea rushed along bales of paper, bungalows, and carcases of pigs. Electrical signalling equipment, where there was water, and on the Tilbury Section, A.T.C. equipment, failed.

During Saturday night (January 31) it was possible only to terminate trains short and to link with bus services. On Sunday morning a reconnaissance was possible. Some important lines, such as those from Beccles to Yarmouth South Town, Wrabness to Harwich, and Benfleet to Leigh, had suffered from a rush of water, and even where the water had receded the whole formation had been swept away over long distances. As damage arose from breaches in nearby sea defences, until the gaps in defences were sealed each succeeding Spring tide for the next day or two would flood the line again.

One of the worst problems was in the Shell Sidings some days later at Purfleet, where the water had floated off the rails some empty rail petrol tanks

Tilbury Section Suburban Traffic

The problem of the heavy Tilbury Section suburban traffic to and from Southend and other stations isolated by the Benfleet-Leigh gap was complicated by the fact that on Saturday evening much motive power and stock was at the eastern end of the district. For Leigh and stations east thereof it was decided to use Southend Victoria, terminus of the former G.E.R. branch from Shenfield. This had reserve capacity, but only three sets of high-capacity steam suburban stock were available. It was decided to run steam trains from Southend Victoria only as far as Shenfield.

Electric Trains at Fenchurch Street

For the additional electric services west of Shenfield, one nine-car train could be taken from maintenance for a few days and three were withdrawn from the normal service.

The terminal chosen was Fenchurch Street, so as to get passengers to their usual terminal; to relieve Liverpool Street; and to offer from Fenchurch Street an alternative service to Southend which would relieve Benfleet trains.

To prepare the electrified line (not normally used by electric trains) between Bow Junction and Fenchurch Street, a train ran three trips during the Sunday to sweep contact wires, without any mechanical trouble.

The plan was prepared in detail during the Sunday afternoon and provided for a journey time of 77 min. from Southend Victoria to Fenchurch Street *via* Shenfield.

On the Monday morning, despite steps taken to advise the public by newspaper and wireless announcements, trains, though they ran well to time, were almost empty, but within two days 8,000 extra passengers were using the Shenfield route each peak.

Even by February 11 the breaches were not finally sealed. At high water (fortunately between traffic peaks) the depth at the line side increased by about a foot, and trains for a period either side of high tide had to terminate at Benfleet. The full Tilbury Section service began to operate on the morn-

ing of February 19, after nineteen days of emergency working.

The pattern of the planning of successive restoration of the passenger services by stages was much the same in the King's Lynn, Yarmouth, and Lowestoft areas. The most serious difficulty was in the speed restrictions of 5 or 10 m.p.h. for the first day or so over new formations, often three miles in length. Emergency arrangements such as the entrainment of Continental passengers at Wrabness, between which station and Parkeston Quay they were conveyed by road, for a few days entailed some delays.

In the movement of engineer material through Whitemoor, the principal concentration of freight for East Anglia, there were moved 2,000 wagons a week more in the three weeks ended February 21 than in the corresponding period of 1952.

Alternative railheads were set up at convenient points as near the destination as possible, such as King's Lynn for Hunstanton and Manningtree and later Parkeston for Harwich.

In sorting out traffic which could be handled from that which could not, the success of the policy of alternative railheads and diversions appeared in the small number of wagons that had to be held back.

Punctuality

The only exclusions from the punctuality statistics were trains which did not complete their booked journey. Yet the results for both passenger and express freight trains were an improvement on 1952. Expresses, at 4·8 min. late arrival, 44·7 per cent to time, compared with 6·3. Local trains at 1·7, 74·3 per cent to time, compared with 1·8. The express freight result at over 35 per cent to time and 77 per cent less than 30 min. late was the best result for any February since the war.

Locomotive Water Contaminated

The water supplies at several of the affected motive power depots were contaminated by the salt water and the immediate application of Polyamide was successful in reducing priming, which might have resulted, to a minimum. A quantity of silver nitrate was distributed to all coastal depots to be used for testing for the presence of salt in the water.

Administrative difficulties in the Motive Power Department included the issue of clothing to staff who had lost clothing or their homes temporarily, by flooding. Exactly half of the Tilbury Motive Power Depot staff had their homes flooded.

At Yarmouth South Town three engines were stranded in the station and there were ten in the depot. It was not possible to move these engines, because of the depth of water, until the afternoon of February 6, when those in the station were moved to higher ground before being given attention and sent to Lowestoft. Those from the depot were moved the next day, when culverts and bridges on the Norfolk & Suffolk line had been dammed by sandbags and the Cobholm and South Town areas of Yarmouth had been cleared by pumping.

Engineering Problems

From the civil engineering point of view the most critical situations arose on sites where the land level is below Spring tide level and is defended by sea or river banks. Judging by the scour on the inland side of such walls and the sodden condition of their tops, the water level actually overtopped the banks and poured in a solid sheet on to the low-lying ground. Damage depended largely on the amount by which the water overtopped the wall. Where this was considerable, the speed of flow over the land was high; where it was relatively slight, the water level rose without any violent movement except near the bank.

Dovercourt Bay Station, showing damage to telegraph poles and fencing and some of the débris on the track

In almost every case, this overtopping caused erosion at the lowest points in the bank, which quickly developed into breaches as the enormous volume of impounded water tried to force its way back to sea as the tide fell. Thereafter, ebb and flow through the breaches scoured out great holes in them, until neap tides took high tide level below ground level or the breach could be sealed. At such low-lying sites, the track is usually on an embankment which, in its turn, was overtopped and eroded on the inland side.

Where the land was just above normal sea level, as in the case of the area from King's Lynn to Hunstanton, the effect was that of a tidal wave doing its damage in one fell surge. Here, the track and ballast were swept off the formation. The main work of repair comprised clearing of beach huts and other debris, replacement of the lost ballast, and recovery and reinstatement of the track.

Where the land is below normal high tide level, the problem is more involved. So far as is known, the phenomenal sea level overtopped the defence banks and poured down in a solid sheet on to the reclaimed land. The flow caused erosion and, finally, breaches in the banks. At such places, the railway is usually on a low embankment which, in its turn, was overtopped and breached. Here, not merely was the track swept away, but breaches were forced in the embankment. At most of these places, until neap tides, each tide resulted in a torrent of water pouring in at high and out at low tide, scouring away each time at the weakened earthworks. A typical example of such a problem arose near Benfleet-Leigh.

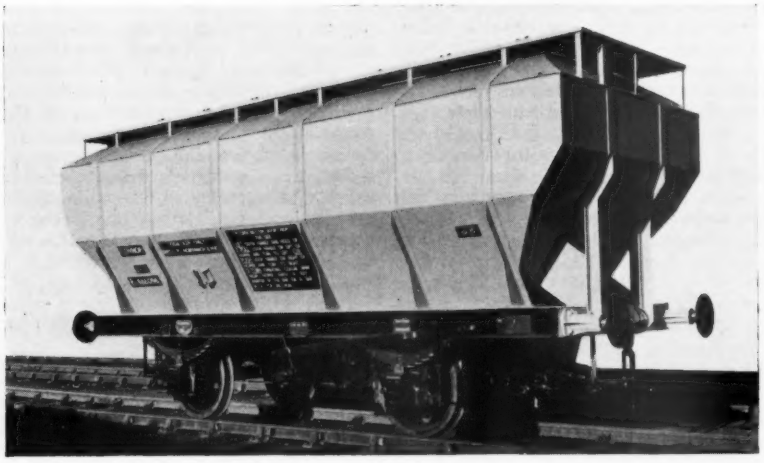
Each problem needed different treatment. At Haddiscoe in the Norfolk Broads, the River Yare overflowed and swept five breaks in the railway bank, the largest 35 yd. long. Helped by local farmers, the engineers filled the breaches by running tipping lorries along the railway formation from a level crossing.

At Lowestoft, the seas swept over the shore and came down behind the Hamilton Dock. A solid concrete quay wall 400 ft. long was converted into a dam and, as the tide fell, the impounded water forced the wall over until it was tilted to a dangerous angle. Emergency measures with chains and anchorages have secured this wall until permanent repairs can be made.

Besides the problem of keeping repairs fed with materials, was that of maintenance of the large number of Civil Engineer's Department and contractors' men, issues of clothing, and other administrative problems.

New British Railways Wagons

Standard stock of all-steel construction designed to negotiate 1 ch. radius curves



Covered hopper wagon for conveyance of chemicals

TWO further standard wagons to meet the requirements of specific traffic have been built at Derby to the specifications of Mr. R. A. Riddles, Member for Mechanical & Electrical Engineering. They are a 27-ton iron ore wagon and a 24-ton covered hopper wagon both of which were demonstrated at Battersea last year, as described in our September 19, 1952, issue. The wagons are designed to satisfy the demand for a wagon having the maximum permissible gross weight which can be carried on four wheels. They will negotiate a 1-ch. curve.

The covered hopper van is for the bulk conveyance of chemicals such as soda ash, sodium tripolyphosphates or catalysts. It provides the maximum capacity within a total gross load of 35-tons; the body takes full advantage of the loading gauge. The length over buffers is 24 ft. 6 in. and the wheelbase is 10 ft. 6 in.

The underframe is of special design to accommodate the hoppers through which the load is ejected between the frames. It is of all-welded construction and is 21 ft. 6 in. long with standard buffing and drawgear with three link couplings. The wheel diameter is 3 ft. 1½ in. with 10 in. × 5 in. journals and fabricated steel axleboxes. Standard laminated springs 3 ft. 6 in. long are fitted with standard spring shoes. The most recent design of brake used can be applied from either side of the van and operates one block on each wheel of one axle.

The body is of welded construction and is built up of ⅛ in. mild steel plates for the roof and sides; ¼ in. thick plates are used for the ends and the hopper portion of the body. Tee sections and gusset plates stiffen the body and are welded to the underframe, the combined body and underframe giving adequate strength and stiffness. A ¼ in. thick partition divides the body into two compartments and two hinged doors 6 ft. 11 in. long and 2 ft. 5 in. wide are provided in the roof, fitted with rubber weather seals and secured by screwed eyebolts.

A roof vent is used with or without valve, according to traffic and a catwalk is also provided to give ready access to the filling doors. The interior is completely flush and the hoppers can be completely discharged by gravity through two sliding doors in each compartment. The opening mechanism for each door is a rack and pinion operated from either side of wagon by a removeable handle. The doors can be sealed by wire seals.

When the wagon is used to carry soda ash or sodium tripolyphosphate, a coupling of a quick detachable vibrator is welded to the sides of the hoppers to assist unloading.

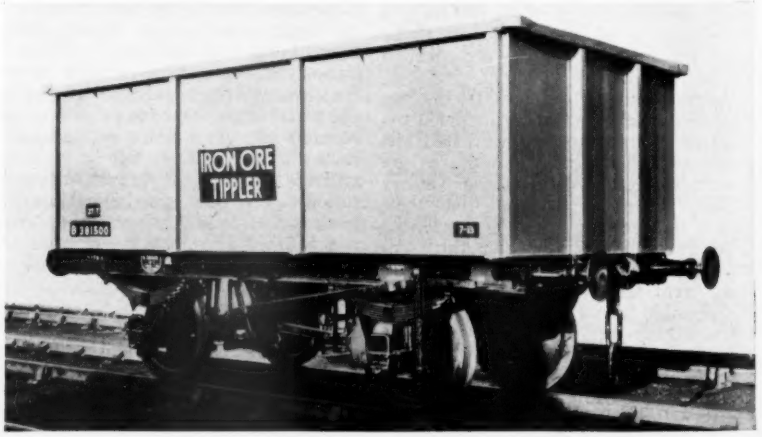
Iron Ore Wagons

The iron ore wagons are of all-steel construction and designed for discharge by tippler. They are 19 ft. 6 in. long over buffers, and have a wheelbase of 9 ft. Standard rolled steel channels 9 in. × 3½ in. × 7/16 in. web are used for the underframe members; two designs are used for either welded or riveted construction.

The bodies are of high-tensile, low-alloy steel 3/16 in. thick, or of ¼ in. thick mild steel plate. They are strengthened by pressed steel side and end stanchions, the former being stiffened to accommodate tippler beams. A flush interior is provided, and there are no doors.

The buffing and drawgear, wheels and axles are standard, and similar to those of the hopper vans; the axleboxes are of cast iron. The brake gear and spring rigging is also similar and of standard design, the former gives a leverage of 30 to 1.

DEVELOPMENT OF ILLUMINATION TECHNIQUE.—The stand of the General Electric Co. Ltd. at this year's British Industries Fair will show the manner in which research and development have been applied to the production of electric light sources of the filament and discharge types. Photographic backgrounds to displays of industrial lighting fittings will show typical large scale installations for which the company has been responsible. Outdoor lighting equipment will include a new lantern housing five 8-ft. cold cathode tubes formed into a U-shape. Airport lighting will be represented by a diorama showing an airport as it appears to a pilot coming in to land.



Iron ore wagon for tippler discharge

RAILWAY NEWS SECTION

PERSONAL

Mr. George B. Howden, who has been appointed Chairman of the Ulster Transport Authority, relinquished his position as General Manager of Coras Iompair Eireann on April 1.

Mr. R. C. Sen, Chief Electrical Engineer, Eastern Railway, India, has retired. He has been succeeded by Mr. P. P. Kulkarni.

Belgrano Railway in March, 1950. A year later he was transferred to the Ministry of Transport as Technical Adviser, which post he now leaves to join the General San Martin Railway as General Administrator.

We regret to record the death in Argentina, at the age of 72, of Mr. O. T. Wood, former Signal & Telegraph Superintendent, Central Argentine Railway. Mr. Wood retired in 1941.

Miss Margaret Kidd, Q.C., M.A., LL.B., has been nominated a Member of the Special Panel of the Transport Tribunal in succession to Mr. R. H. Sherwood Calver, Q.C., who has resigned following his appointment as Sheriff of Lanarkshire.

Mr. Norman Charles Vogan, Assistant Chief Civil Engineer, New South Wales Government Railways, who, as recorded in our March 6 issue, has been appointed

Mr. C. A. Pizzorno

Appointed General Manager,
General San Martin Railway, Argentina

Mr. N. C. Vogan

Appointed Chief Civil Engineer,
New South Wales Government Railways

Mr. Carmelo A. Pizzorno, who, as reported in our September 19, 1952, issue, has been appointed Administrator (General Manager) of the General San Martín Railway, Argentina, was born in 1898, and graduated as a Civil Engineer. Joining the Argentine State Railways in 1922, he was employed as Assistant Engineer on the construction of the Federal to Curuzú Cuatiá branch. In 1929 he was appointed Inspecting Engineer on the construction of the Metán to Barranqueras line. Two years later he was appointed Chief Construction Engineer on the Federal to Curuzú Cuatiá lines, later occupying similar positions for the Paraná to María Grande and Salta to Socompa lines. In 1948 he became Principal Engineer in the Administration of the General Belgrano Railway, leaving the next year to become General Manager of the Patagonian National Railway in Puerto Madryn. After a short period as General Manager of the General Mitre Railway, he was appointed General Manager of the General

Mr. Jas. B. Thom, European Manager of the Canadian National Railways, has been elected President of the Canadian Chamber of Commerce of Great Britain.

Mr. F. M. Khan, who, as recorded in our September 5, 1952, issue, retired as Director-General of Railways, Pakistan, on July 1 last, has accepted the Chairmanship of the Karachi Port Trust in succession to Mr. Z. H. Khan, who has retired.

Mr. G. N. Hukeri, Assistant Auditor, Barsi Light Railway, India, has been promoted to Chief Auditor.

Dr. V. G. Desai, Assistant Medical Officer of the same system has become Chief Medical Officer.

Mr. F. W. Cazneau, Assistant Comptroller of Accounts & Audit, New South Wales Government Railways, has been appointed Comptroller of Accounts & Audit, in succession to Mr. F. V. Bullen, who retired on February 1 of this year.

Chief Civil Engineer in succession to Mr. R. V. G. Pennefather, who has retired, is 51 years of age, and was born in Sydney. He was educated at the Sydney Church of England Grammar School and the Sydney University, where he graduated in civil engineering. During his university course he was employed for six months on the railways as Assistant Engineer on the construction of the City Railway. He entered the department in 1924 as a draughtsman in the Design Office of the Bridge & Structural Section, and, from 1926 to 1930, he was Assistant Engineer on the widening and electrification of the main suburban line from Sydney to Homebush. He was also an assistant engineer in country districts. In the last war, Mr. Vogan carried out the duplication of the main southern line between Cootamundra and Junee, in addition to other important wartime railway works. In 1949, he was appointed Technical Assistant to the Chief Civil Engineer and, in 1952 became Assistant Chief Civil Engineer, Construction.

XUM

Mr. Willard H. Kyle

Appointed Vice-President, Central Region, Toronto, Canadian National Railways

Mr. A. J. Lomas

Vice-President, Central Region, Toronto, Canadian National Railways, who is retiring

Mr. Reginald Hayes

Appointed Assistant Vice-President, Operation, Montreal, Canadian National Railways

Mr. Willard H. Kyle, Assistant Vice-President, Operation, Montreal, Canadian National Railways, who, as recorded in our March 20 issue, has been appointed Vice-President, Central Region, Toronto, began his railway career as a track layer little more than 25 years ago. Mr. Kyle gained railway experience while still attending McGill University when he worked as a student for the engineering department of the C.N.R.'s Montreal district. It was this early experience that led him to make railways his career following his graduation from McGill with a B.Sc. degree in 1926. Since then Mr. Kyle has held many important railway posts and has gained a thorough knowledge of all phases of railway operation. He has been successively Assistant Engineer, Division Engineer, Assistant Superintendent, Superintendent, General Superintendent, General Manager, Central Region, and Assistant Vice-President, Operation, Montreal. He is a member of the Canadian Railway Club of Toronto and Montreal, the Toronto Traffic Club, the National Club, St. Maurice Fish & Game Club and Montreal Caledonia Club.

Mr. A. J. Lomas, Vice-President, Central Region, Toronto, Canadian National Railways, who is retiring after nearly 44 years' service with the C.N.R., is a native of Spondon, England, and has held numerous posts in the Operating Department, including those of Baggageman, Chief Clerk, Dock Agent, Yard Agent, Yardmaster, Fuel Supervisor, Acting Assistant Superintendent, Assistant Superintendent, Superintendent, General Superintendent, General Manager, and Vice-President. Throughout his service Mr. Lomas has served at various points including Lake Joseph, Sudbury, Key Harbor, Trenton, Rosedale, Capreol, Hornepayne, Gravenhurst and Toronto in Ontaria and in Montreal. He is a member of the Rotary Club of Toronto, the advisory Board of the Y.M.C.A. Toronto, and the Council of the Toronto Board of Trade.

Mr. Reginald Hayes, General Manager, Central Region, Toronto, Canadian National Railways, who, as recorded in our March 20 issue, has been appointed Assistant Vice-President, Operation, Montreal, brings to his new post more than 38 years' railway experience. He began his career in 1915 as a clerk and was successively promoted to Secretary to General Manager, Assistant Chief Clerk, Chief Clerk, Superintendent, General Superintendent and General Manager. During his long service, Mr. Hayes has served at Moncton, Montreal, Toronto, Hornepayne, St. Thomas, Ottawa, and North Bay. He is a member

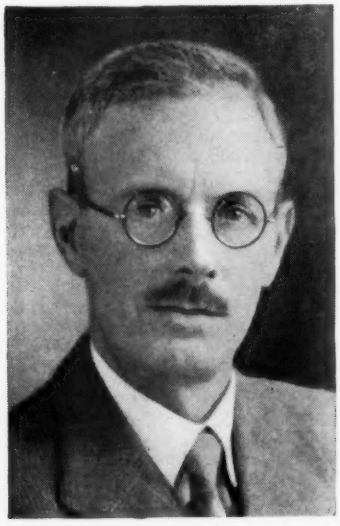
Pretoria] *[News*

Mr. D. J. J. du Plessis

System Manager, Pretoria, S.A.R. & H., 1945–53

Mr. T. R. Hall

Appointed District Motive Power Superintendent, Newton Abbot, Western Region



The late Mr. H. N. S. Edwards

District Motive Power Superintendent, Western Region, 1942–53

of the Canadian Railway Club of Toronto and Montreal, and of the Toronto Board of Trade.

Mr. D. J. J. du Plessis, System Manager, Pretoria, South African Railways, who, as recorded in our February 6 issue, has retired, completed 42 years' service on January 23, 1953. Mr. du Plessis was born in Bloemfontein 60 years ago. He entered the railway service in 1911, and served on the O.F.S. System until 1928, when he was appointed Welfare Officer in Natal, with headquarters at Durban. In 1931 he became Chief Clerk in the Office of the Ministry of Railways and of the Railway Board, Pretoria, and four years later he was appointed Assistant Manager of the Publicity Department. In 1936 he became Superintendent, Operating & Commercial, Bloemfontein. He later moved to Johannesburg to become Staff Superintendent. In 1944 he was appointed System Manager, Bloemfontein, and a year later was posted to Pretoria, where he held the same position until his retirement. Mr. du Plessis served for many years on the hospital boards in Bloemfontein and Pretoria. He is still a member of the local Board. He is Assistant Commissioner of the S.A.R. St. John Brigade and a member of the Institute of Transport.

Mr. T. R. Hall, District Motive Power Superintendent, Cardiff, Western Region, British Railways, who, as recorded in our March 20 issue, has been appointed District Motive Power Superintendent, Newton Abbot, commenced his railway service in the Locomotive Works, Swindon, as an apprentice in the Brass Fitting & Turning Shop and served 14 years in the Drawing Office. Appointed temporarily as Assistant to the Divisional Locomotive Superintendent at Newton Abbot in 1939, he returned to Swindon in 1945 as Assistant to the Locomotive Running Superintendent and Outdoor Assistant to the Chief Mechanical Engineer, which post was later redesignated Assistant to the Motive Power Superintendent (Mechanical). Mr. Hall was appointed District Motive Power Superintendent, Cardiff Valleys District, in 1950. He is a member of the Institute of Locomotive Engineers.

Mr. H. N. S. Edwards, District Motive Power Superintendent, Bristol, Western Region, British Railways, whose death was recorded in our March 27 issue, joined the staff of the Taff Vale Railway in 1910 as an apprentice at West Yard, Cardiff. He served with the Royal Engineers (T.A.) from 1914 to 1919; he then returned to railway service as a draughtsman, and later was appointed Inspector. After the amalgamation of the railways, Mr. Edwards transferred to the Newport Division as Inspector, and in 1929 was appointed Assistant to the Divisional Locomotive Superintendent there. In 1933 he transferred to Bristol in a similar capacity, and, in July, 1941, was appointed Assistant to the Locomotive Running Superintendent & Outdoor Assistant to the Chief Mechanical Engineer, Swindon. He became Divisional Locomotive Superintendent, Cardiff, in April, 1942. This post was later re-designated District Motive Power Superintendent. Mr. Edwards was an Associate Fellow of the Permanent Way Institution.

The funeral took place at Canford Cemetery, Bristol, on March 20.

In addition to family mourners, among those present were:—

Western Region:—Messrs. W. N. Pellow, Motive Power Superintendent, T. R. Hall, District Motive Power Superintendent, Newton Abbot, H. E. A. White, District Motive Power Superintendent, Neath, W. E. Blakesley, District Motive Power Superintendent, Worcester (also representing Mr. F. W. Abraham, Motive Power Superintendent, Midland Region, and Mr. O. E. Kinsman, Divisional Motive Power Superintendent, Derby, Midland Region), Messrs. W. A. Griffiths, District Motive Power Superintendent, Cardiff, D. C. I. Reynolds, Assistant District Motive Power Superintendent, Bristol, J. H. Williams, Chief Clerk to District Motive Power Superintendent, Bristol, R. Prosser, Chief Clerk, Newport (also representing Mr. C. H. D. Read, District Motive Power Superintendent, Newport), L. Edwards, District Operating Superintendent, Bristol (also representing Mr. Gilbert Matthews, Operating Superintendent), H. Bolton, District Commercial Superintendent, Bristol (also representing Mr. T. H. Hollingsworth, Commercial Superintendent, Scottish Region, and Mr. D. Hawkeswood, District Commercial Superintendent, Exeter, Western Region), H. G. Lakeman, District Engineer, Bristol, S. E. Merriman, District Estate Surveyor, Bristol, R. Woolacott, Assistant to Mechanical & Electrical Engineer, Swindon (also representing Mr. R. A. Smeddle, Mechanical and Electrical Engineer, Swindon).

Southern Region:—Mr. W. H. Nicholson, District Motive Power Superintendent, Eastleigh.

London Midland Region:—Mr. G. Robson, Assistant Divisional Motive Power Superintendent, Wolverhampton (also representing Mr. C. R. L. Rice, District Motive Power Superintendent, Wolverhampton).

We regret to record the death on February 27, at the age of 72, of Sir David Anderson, President of the Institution of Civil Engineers from 1943-44. He was educated at Dundee High School and St. Andrews University and began his career as assistant to the late Sir Benjamin Baker. Subsequently, he joined the late Sir Basil Mott as Chief Assistant and was afterwards taken into partnership, the style of the firm being Mott, Hay & Anderson. The most important work of the firm was the design and construction of the Mersey Tunnel, but much bridge building also stands to its credit, including Southwark Bridge, the Tyne Bridge, Wearmouth Bridge, and Tees Bridge. With his partners Anderson was Consulting Engineer to the Central London and the City & South London tube railways. He was responsible, as Joint Consulting Engineer for the London Passenger Transport Board (now the London Transport Executive), for the realignment of the Central line to Newbury Park, Ilford. He was Consulting Engineer to the Corporation of London and was employed by the Ministry of Transport as Joint Engineer for the projected tunnel under the Thames at Dartford; he was also engineer for the Tyne tunnels. In 1949 he was appointed by the Minister of Works to be Chairman of a committee to secure the maximum efficiency and economy in the use of steel.

The following changes have taken place in the administration of the New Zealand Government Railways:—

Mr. F. R. Murray, Assistant Transportation Superintendent, has been appointed Assistant to the General Manager, a new position on the system.

Mr. A. Evans, Acting Transportation Superintendent, has been appointed Transportation Superintendent, *vice* Mr. C. H. Bray, who, as recorded in our January 23 issue, has been appointed a Director of the newly-formed New Zealand Railways Commission.

Mr. C. E. Smith, Transport Officer, Napier, has been appointed Assistant Transportation Superintendent.

Mr. E. F. Farr, Senior Train Running Officer, has been appointed District Traffic Manager, Christchurch.

Mr. S. F. Clarke, Commercial Agent, Dunedin Railway District, has been appointed District Traffic Manager, Dunedin.

The following have been appointed members of the Ulster Transport Authority:—

Messrs. A. G. Algeo, W. A. Edmensen, J. E. Finney, S. J. McCoubrey, T. G. M'Laughlin, J. S. Rogers, A. E. Swain, James Walker and Sir Dudley M'Corkell. Messrs. Algeo, Finney, M'Laughlin and Walker are new members. Mr. Walker is chairman of the Electricity Board. Mr. M'Laughlin is a member of the G.N.R. Stockholders' Protection Association.

The members of the Authority, other than the Chairman, will hold office form April 1, 1953, until March 31, 1956.

Mr. Frank Wortley has been appointed a Director of Thos. Firth & John Brown Limited.

Mr. P. R. Scutt has been appointed Managing Director of Tecalemit Limited. He was first appointed to the Board in August, 1948, with the title of Director of Production and later received the title of Director & General Manager.

Mr. B. H. Mears, a Director of Associated British Oil Engines (Export) and National Oil Engines (Export), has been appointed Sales Director of Mirrlees Bickerton & Day, Limited, another member of the Brush Aboe group of companies. Mr. Mears has recently returned from a tour of Canada, and during the last four years he has travelled extensively for the group in India, Pakistan, Australia and Africa.

Institution of Mechanical Engineers

The following is a selection of names from a list of recent elections to the Institution of Mechanical Engineers:—

Member:—Mr. R. Newell, Harland & Wolff Limited, Belfast.

Associate Member to Member:—Mr. W. O. Skeat, London.

Associate Members:—Messrs. A. R. Bradley, Rover Co. Ltd., Birmingham, P. A. V. Dolleymore, Shell Petroleum Co. Ltd., London, W. Hryniszak, C. A. Parsons & Co. Ltd., Newcastle-upon-Tyne, O. R. Hunter, Mechanical Engineering Research Laboratory, Glasgow, W. H. Stanford, Varley Pumps & Engineering Limited, London, F. J. Turner, English Electric Co. Ltd., Bradford.

TRANSPORTATION CLUB MONTHLY DINNER

Mr. C. T. Brunner, President of the Institute of Transport, was the principal guest at the monthly dinner of the Transportation Club held at 44, Wilton Crescent, S.W.1, on March 26. Mr. G. S. Szlumper, Chairman of the Club, presided. Among those present were:—

Messrs. A. L. Bagley, J. Douglas Black, V. Bridgen, F. L. Castle, B. W. C. Cooke, G. Cotterell, H. C. Crane, F. W. Crews, Captain N. M. Daisley, Messrs. L. T. Davies, J. Durie, Captain B. C. Frost, Messrs. D. H. Handover, C. P. Hopkins, Shirley H. James, F. A. Nicholson, H. G. N. Read, R. Simpson, C. C. H. Wade. C. H. Warrilow, D. Watson, W. Cyril Williams, and H. Wilmot.

Parliamentary Notes

Transport Bill Third Reading in House of Lords

White Paper to be published on railway reorganisation: B.T.C. "shackled" in quoting charges

Lord Leathers (Secretary of State for the Co-ordination of Transport, Fuel & Power) moved the third reading of the Transport Bill in the House of Lords on March 26.

He understood nearly 100 amendments out of 211 on the order paper would have been incorporated in the Bill in its passage through the Lords, of which 30 were important. This was strong evidence that that Chamber had a valuable part to play in framing legislation.

Viscount Swinton (Secretary of State for Commonwealth Relations) said he had tabled new amendments to deal with the sale of transport units and with the Minister's consent in relation to the sale of shares in companies.

White Paper on Reorganisation

The Government, he added, thought it right to adopt the suggestion made earlier by Lord Jowitt that the Minister should produce a White Paper containing details of the scheme for railway reorganisation and that the draft order should not be tabled at that stage. There would be a debate on the White Paper in both Houses and afterwards the Minister would table the draft order and ask Parliament to pass the necessary Affirmative Resolution. That undertaking applied only to the original reorganisation scheme and not to any subsequent amendments which required to be approved by Affirmative Resolution.

Earl Jowitt said that the results achieved by the Opposition arguments in committee had been meagre. They had expected their reasoned amendments to be met by counter-arguments. In the political circumstances of today he would have thought it wise for the Government to compromise.

He had been told, he said, that the banks had been tipped off to relax credit restrictions and to give credit facilities to the buyers of transport units. If this were true the House ought to be told plainly that a privileged class was being created.

Road Haulage Handicapped

The B.T.C. had operated the transport services efficiently. Surely the Government could have allowed it sufficient vehicles to carry on in business while destroying its monopoly. Why make it go into competition with its hands tied behind its back? A very efficient public enterprise was being sacrificed just because it had proved so completely efficient.

The Opposition, Lord Jowitt went on, would not divide but could not feel happy about the whole procedure. If when a Conservative Government was in power they were going to have a single-chamber system the ranks of those who desired to speak against the House of Lords would be greatly increased.

The Earl of Selkirk (Lord-in-Waiting) said that the Treasury had informed the banks that it considered that action under the Bill was a suitable subject for credit in the national interest.

Hint of Industrial Strife

Lord Burden said that the Bill would not bring harmony, good will, or prosperity in the transport world. It might well bring about bitter industrial strife. He pleaded for a co-ordinated national transport system, and reminded the House how Lord Hurcomb in 1935 and 1945 had recorded the trend away from unrestricted competition towards harmony of operation of the different transport agencies.

Lord Teynham said that the 1947 Act could not have remained in its present form, and the Bill contained a workable scheme for the transport industry.

Lord Lucas of Chilworth said that one of the striking things throughout the debate was that the Commission's case had only been stated by Opposition peers. Lord Swinton had been the self-constituted prosecuting counsel, judge, and foreman of the jury against the B.T.C. It might be that the Commission would prove the salvation of the transport system. This auction sale and chattel disposal was being launched on the country at the worst time, and chaos was going to rule.

Transport Levy

Lord Lucas said the Government knew the chaos it was going to bring about because they had said in the 1952 White Paper that they must have a levy to recompense the railways for what they were going to lose by this great increase in road transport. What they did was to give up half the levy, and then they were supposed to give the railways freedom.

Freedom in Charging

During the Committee stage, he added, there had been attempts to nibble away that freedom, and to put another shackle around the freedom of the Commission in relation to charges. Now the Association of British Chambers of Commerce had asked publicly that the man who put his goods on rail should have as much right to protest against unfair rates as the man who was "tied" to the rail and who, quite rightly, had that right in the Bill today. Coastal shipping interests had the right of appeal to the Transport Tribunal about unfair treatment by the railways, but they had no right to complain to the Tribunal about unfair competition by road haulage.

In the last White Paper, he went on, the Government had admitted plainly that there could be no real basis of competition between the public transporter who had to give a public service and absorb fluctuations in demand, and the private enterprise transporter who creamed the traffic.

In the future when the B.T.C. wished to close an unremunerative branch line, it would have, in the forty-odd bus companies now controlled 100 per cent by the Commission, only a minority interest, as a result of the Minister directing that it should sell all but its minority interest holdings. Therefore, it would have no direction of policy enabling it to fill the gap caused by the shutting down of a branch. They would see a repetition all over the country of the practice now obtaining in the West Highlands and Islands of Scotland, of private enterprise being subsidised by the Government so as to run unprofitable services.

Amendments Accepted

The Marquess of Salisbury said it had been suggested that the House of Lords was a revising chamber only when the Labour Party was in office, and that under a Conservative Government it was merely a rubber stamp. This was an entirely distorted view, and created the impression that the Labour Government were open-minded and ready to accept amendments, however far-reaching they might be. During the passage of the 1947 Transport Bill amendments by the Opposition in the Lords were struck out by the Government in the Commons. Every disputed point of any real substance was voted down in the Commons. On this Bill the Government had accepted various amendments, including eight of substance.

The amendments indicated by Lord Swinton were agreed to.

The Bill was read the Third Time, and passed, and returned to the House of Commons.

Transport Bill in Commons

The House of Commons as we went to press was due to debate the Transport Bill (as amended by the House of Lords) on March 31, before the Easter recess.

Freight Charges for Coal

Mr. Alan Lennox-Boyd in reply to a question on March 16 said that no purpose would be served by directing the B.T.C. under Section 4 of the Transport Act, 1947, to consult with the National Coal Board with a view to nationalised coal being carried at a low rate in return for a reduced rate for coal supplied to the Commission. To the extent that such an arrangement would make any difference, he said, it would mean that transport users would benefit at the expense of coal users, and *vice versa*.

Isle of Man Railway Company

The ordinary general meeting of the Isle of Man Railway Company was held in Douglas on March 4, Mr. R. Q. Hampton, Chairman, presiding.

The Chairman said that there had been an encouraging increase of 44,534 in the number of passengers, but to offset it goods traffic declined by £1,077 and there had been a further increase in the wages bill of £1,606. Only by reduction of the winter service to skeleton lines, and by stringent economies, could they show so small an addition to the wage bill.

The full equity of the subsidiary, Isle of Man Road Services Limited, was now the property of the company. There was no major expenditure in 1952 and reserve funds were unchanged. Rolling stock, buildings, and permanent way had been well maintained and were ready for what they hoped would be an excellent season.

The balance of net revenue account was £12,688 15s. 6d., to which was added the amount brought forward from 1951 of £2,761 18s. 2d., making a disposable balance of £15,450 13s. 8d. Debenture interest for the year had been paid, leaving a balance of £8,450 13s. 8d. It was proposed to pay a dividend on the preference shares at 5 per cent, amounting to £2,500, and a dividend of 2½ per cent on the ordinary shares amounting to £3,500, totalling £6,000, and to carry forward to the next year's accounts the sum of £2,450 13s. 8d.

B.T.C. Charges Scheme Before Tribunal

Efforts to attract traffic by lower fares

At the resumed hearing on March 25 by the Transport Tribunal of the B.T.C. Passenger Charges Scheme, Mr. A. B. B. Valentine, Member of the London Transport Executive, said that the public had a service frequency on the tubes of either 2½ min. or 3 min. With regard to the practice of uncoupling trains during off-peak hours, when the shorter trains were introduced the interval was reduced from 3½ min. to 2½ min. and last November the interval was extended to 3 min.

Later in the proceedings Mr. Valentine was questioned on bus operation, and said the Executive would like a greater latitude in the question of the carriage of standing passengers outside the peak hours. They would endeavour, if the opportunity arose, to persuade the staff to accept the rule. With the present type of vehicle in London conditions they would be quite content with five standing.

On the subject of early morning fares, Mr. Valentine agreed that the charges they were asking for would represent the following increases on the pre-1950 figures: three miles, 125 per cent; six miles. 100 per cent; nine miles 90 per cent. Answering questions on season tickets, he said the flat increase in season ticket rates had been prepared to keep the season ticket rates in the same relationship as at present to the ordinary fares. He had always been doubtful whether there was an adequate economic defence for the issuing of season tickets at all, except where long-period season tickets had the effect of stabilising a substantial amount of peak-hour traffic to rail.

The advantage of stabilising a useful proportion of London Transport peak hour traffic to rail was that it saved, ultimately, expenses on the road side by reducing the amount of road service required to deal with what would otherwise be the high peak traffic when weather conditions, or other circumstances, tempted travellers to use the road instead of rail.

Discounts increased at the longer distance because the season ticket scale was based on mileage. The tapering of the season ticket scale was entirely designed to allow for the fact that the tendency of passengers to make use of their season tickets diminished as the length of their journeys increased.

On Thursday Mr. Valentine was questioned on the value to transport of the tourist trade. He did not agree that London Transport users were paying for "a tremendous number of costly car-miles" to offer facilities to people who came from all over England. In general, the tourist type of traffic moving about London involved no additional cost in operation, except in years like the Festival year.

The last witness for the Commission was Mr. J. E. M. Roberts, Executive Officer (Rates & Charges), the Railway Executive. He said a reduction in railway fares offered no prospect of improved receipts. Any such reduction would naturally bring more traffic to the railways, but not on a scale sufficient to compensate for the loss of receipts. Selective reductions below the ordinary fare of 1½d. per mile continued to show good results. He added that, in particular, reduced fares for short-distance return journeys round the main centres of population were encouraging travel which would not otherwise be attracted.

The reduced fare arrangements were adjusted from time to time and would possibly be developed. Experiments were being made with reduced fares in other fields where there was a possibility of increasing railway receipts. The Railway Executive was just embarking on an experiment with a much-reduced period fare between London, Edinburgh, and Glasgow. There was a big potential railway traffic on this route—some going by road and some not at all. The reduced fare was selective in that it would apply only to travel between the terminal points and would not affect the intermediate fares. Bookings had shown an encouraging start, but they could not possibly give any assessment of financial results until the experiment had worked for some time. They were hoping that by means of the special facilities for travel between London, Glasgow, and Edinburgh, they would bring travel between England and Scotland within the range of many people who could not afford it at the moment.

The tribunal adjourned until March 31.

International Union of Railways (U.I.C.)

The Spring meetings of the sub-committees of the International Union of Railways were held this year at the invitation of the Austrian Federal Railways and the Danish State Railways respectively in Salzburg and Copenhagen, during the first week in March.

The sub-committees which met in Salzburg were those of the two Commercial Committees, Passenger and Goods, and the Accountancy, Finance & Statistics Committee. The British delegation included:—

Messrs. R. H. Hacker, Chief Officer (Continental), Railway Executive, and Chairman of the U.I.C. First (Passenger Traffic) Committee ; H. J. Bourn, Assistant Continental Superintendent, Southern Region ; L. S. J. Keeys, Assistant to Continental Traffic Manager (Commercial), E. & N.E. Regions ; A. Potts, Southern Region ; H. Davis (E. & N.E. Regions) ; and W. B. Addinall, Secretary, Continental Traffic Committee.

Some fifteen countries were represented at the meetings, which covered subjects such as road and air competition, peak-period traffic, charging of loading pallets, international goods tariffs, creation of a central international goods audit office, and economic routine.

In Copenhagen, the sub-committees of the Fourth (Operating) and Fifth (Technical) Committees discussed inter alia standardisation of containers, class of carriage, telecommunication problems, and various phases of electric traction; in the Rolling Stock and Permanent Way Sections the questions included brakes, interchangeable parts, steel for railcar axles, and the acceptance of Continental wagons for running in Great Britain.

The representatives attending the meetings on behalf of Great Britain included:—

Messrs. J. A. Broughall, Executive Officer (Electrical Engineering, New Works & Development), T. W. Brown, Materials Inspection Officer, J. S. Campbell, Assistant (Bridges & Locomotive Permission), S. S. Hirst, Assistant (Terminals), and C. A. Gammon, Railway Executive ; E. G. Brentnall, Assistant Signal & Telecommunications Engineer, London Midland Region ; W. J. A. Sykes, Assistant Electrical Engineer, Southern Region ; and J. W. Kennedy, Continental Traffic Committee.

Official receptions accorded to the delegates were presided over by the Landeshauptmann and the Burgomeister of Salzburg and, in Copenhagen, by Mr. E. Terkelsen, General Manager of the Danish State Railways.

The conclusions reached by the sub-committees will be submitted in accordance with the usual practice for approval at the plenary sessions of the Committees in May.

English Electric Co. Ltd.

The annual general meeting of the English Electric Co. Ltd., was held in London on March 19, Sir George H. Nelson, Chairman of the company, presiding.

The Chairman, in moving the adoption of the report and accounts, said that the consolidated profit before taxation had risen by £716,893 to £4,359,034 but 67 per cent of this total, namely £2,909,516, went in taxation. This meant that despite devotion to research, bold investment over several years in new buildings and plant, and strenuous efforts here and throughout the world, the addition to net profit after taxation was only £93,988, or less than 7 per cent.

During the year a further 275 MW. of generating plant manufactured by the company had been commissioned by the British Electricity Authority. The period had also been notable for their hydro-electric equipment, installations having been opened in Scotland, Spain, Portugal, and Canada. Sales and production of diesel engines for all purposes had expanded in comparison with previous years.

The continued and increasing demand for the company's traction products brought a record volume of orders for 1952, mostly from overseas railways, among which the Commonwealth was well represented. Sixteen out of 63 electric locomotives, the most powerful ever built in this country, had been completed for the Spanish National Railways.

Business in large transformers continued at a very high level and included the despatch of the first 275-kV. transformer to be supplied for service in this country. Two subsequent orders for large high-voltage transformers for the City of Seattle in the United States had been secured against international competition.

The report and accounts were adopted.

ROLLER BEARING EXTRACTION.—A device for extracting ball or roller bearings has been evolved by Civitas Trading Corporation Limited. Known as the Tracta, it consists of a hollow extractor and self-centering chuck with a series of collets with teeth which are classified according to the types of bearing for which they are suitable, together with a threaded thrust pin. To remove a ball race a selected collet is sprung on to it and the extractor body is attached by screwing back the thrust pin and tightening the chuck over the collet which grips the bearing. The thrust pin is then screwed home until it contacts the end of the shaft, when continued rotation draws the body of the extractor backwards and with it the collet and bearings. Taper and parallel-roller bearings can also be removed by the device.

Mansion House Association Annual Luncheon

Challenge of expanding air transport capacity

The annual luncheon of the Mansion House Association on Transport was held at the Trocadero Restaurant, London, on March 27. It had been hoped that the luncheon would have been attended by the Minister of Transport, Mr. Alan Lennox-Boyd, but in the circumstances arising from the recent death of Queen Mary he was unable to be present. He was represented by Mr. S. J. Page, Under-Secretary, Ministry of Transport.

In his speech proposing the toast of the Mansion House Association on Transport, which was read by Mr. Page, the Minister said he had looked forward to telling the President how much the present licensing system owed to him. He wished to thank their organisation for its help in the changes the Transport Bill was bringing about in railway rates and charges. These changes represented the biggest advance in the railway charging position in the last century, and it would have been difficult to accomplish it but for the help of their members. He wished to give particular thanks to Mr. M. F. Barnard, the Chairman of their Council, and to those of their members who were members of the Transport Tribunal.

One Minister was now responsible, and one department would become responsible in future, for air and surface transport matters. The Government desired true partnership between the State corporations and the independent operator in air transport. A large number of applications for licences had recently been granted and a merchant navy of the air was being formed. Many more people had come into London and Northolt airports in civil aircraft last year than through Dover. On the airlift out of Berlin civil airline operators had carried some 25,000 short tons between August, 1951, and August, 1953. Silver City Airways last year flew 6,000 vehicles from Lympne to Le Touquet. In the period 1948-51 the freight ton-mileage of American international air operators multiplied 22 times. There was much traffic here which as international carriers we must try to secure.

In conclusion, the Minister wished good luck to the Association and its most valuable national work.

Sir Alfred Faulkner, President of the Association, replying to the toast, said they prided themselves on being the oldest association looking after all forms of transport of every sort of commodity. They tried to work with whatever Government might be in power, and he expressed their thanks for the sympathetic hearing and consideration given to amendments proposed by traders in the course of the Transport Bill passing through Parliament. The levy applied to C licences was rather a sore point, but that would not prevent the Association from doing all it could to aid the smooth working of the Bill when it became an Act. He appealed to the providers and users of transport to sink differences which were quite minor matters compared with the major one of securing the freedom of transport for the good of the country.

He thought Parliamentary intervention in nationalised industry was inevitable and right, in which connection he quoted the Government intervention on London fares and the request by 130 M.P.'s for an inquiry into the working of the National Coal Board. Personal experience had shown him that the Civil Service was not designed to run industry, and was not capable of doing it efficiently. Their association supported a degree of decentralisation, but they agreed that there were matters like centralised wagon control and locomotive standardisation which it was better to centralise.

Mr. M. F. Barnard, Chairman of Council, proposed "Our Guests." This was a record gathering, and among those he mentioned as being present were Lord Hurcomb, Mr. K. W. C. Grand, and other chief regional officers and their commercial superintendents. He hoped the present railway Regions would find that decentralisation would bear fruit, and fruit to the benefit of the trader. Referring to the presence of Mr. Hubert Hull, he said their association had every confidence in the impartial attitude of the Transport Tribunal.

Lord Waverley, Chairman of the Port of London Authority, replied to the toast. British transport in all its branches, he said, had just emerged from a long period of very hot weather. Now they had the opportunity of sitting back and taking stock. There might be differences of opinion about what had been done, but he thought they must all agree that what they had to do was to concentrate on the vital task of making, in the most effective manner, the contribution which transport had to make to the more efficient productive effort on which our national economy was absolutely dependent.

Among those present were:—

Lord Hurcomb, Sir Cyril Birtchnell, Sir Gilmour Jenkins, Sir Miles Thomas, Sir William V. Wood. Messrs. C. K. Bird, H. Birkbeck, W. E. Blakey, D. Blee, H. R. Caulfield-Giles, F. G. Crabb, C. G. G. Dandridge, G. Dodson-Wells, H. Elliott, C. Furber, K. W. C. Grand, A. E. Hammett, E. J. Hone, C. P. Hopkins, Hubert Hull, E. S. Hunt, W. H. F. Mepsted, S. J. Page, A. C. B. Pickford, J. R. Pike, Major J. C. Poole, Messrs. F. A. Pope, H. G. N. Read, Major-General G. N. Russell, Messrs. A. E. Sewell, L. G. Taylor, W. H. Vine, J. W. Watkins.

Westinghouse Brake & Signal Co. Ltd.

Record sales last year and satisfactory order book

The 72nd annual general meeting of the Westinghouse Brake & Signal Co. Ltd. was held on March 13, Captain A. R. S. Nutting, Chairman of the Company, presiding.

In a statement circulated with the report and accounts, the Chairman said that the trading profits for 1951-52 were excellent; they and the sales reached an all-time record, and the proportion of sales in the export markets was high. Of the trading results of the group, £1,183,732, taxation took £720,843, leaving them with £462,889. To the net profit of £256,603 had to be added profits of previous years, making £273,831. With the balance brought forward from the previous year, £147,984, the sum of £421,815 was available with which to pay the dividend, provide for the increased costs of replacement of plant and machinery, meet essential capital expenditure, make allocations to research and development, and generally finance the large business and its numerous demands and projects.

Unless there was some tax relief it did not take a great deal of foresight to see that British industry would gradually decline and lose its present position in world markets. The board had decided to use the £421,815 available first to increase the reserve for the replacement of plant and equipment by £105,000, to £600,000. To the general reserve £50,000 would be added, making it £750,000.

The dividend of 14 per cent had been maintained for nine years but this year it was felt that the 1951-52 results called for an increase. The board had therefore decided to recommend a dividend of 15 per cent, absorbing £88,387. The transfers to the reserves and the cost of the dividend recommended would absorb a total of £243,387, leaving £178,428 to be carried forward to the 1952-53 account.

The company's interests in subsidiaries at home and abroad were substantial and renumerative. They had large interests in Australia and India and were mindful of the need to consider from time to time the advisability of setting up further local manufacture and assembly in other parts of the British Commonwealth.

The consolidated balance sheet called for little comment, except to draw attention to the 4½ per cent unsecured note for £A150,000, which the newly-formed public company, the Westinghouse Brake & Signal Co. (Australia) Ltd. obtained. This new subsidiary had acquired all the issued capital of the two private companies, the Westinghouse Brake (Australia) Pty. Ltd. and McKenzie & Holland (Australia) Pty. Ltd., which were the manufacturing and operating subsidiaries of the new company. The surplus of current assets over current liabilities and dividends of £3,164,809, showed the sound and healthy state of the group's financial affairs.

The Brake Division, comprising air and vacuum brakes for railways, steam heating for railways, and air brakes for buses, trolleybuses, and commercial and fighting vehicles, remained active and maintained the 1950-51 volume of despatched sales. The Signal & Colliery Division showed a material improvement over the 1950-51 volume of despatched sales. It comprised signalling of all kinds, all-electric, electro-pneumatic, and mechanical, for use on railways and is also included power decking plant and tub handling and control systems for collieries and mines. The mechanisation of mines and collieries had resulted in increased demands for this plant and these systems. The division carried out, in conjunction with the London Midland Region of British Railways, a resignalling contract at Euston Station.

The company's total despatched sales during 1951-52 were a record, and orders on hand at the present time remained at a high and satisfactory figure. At the end of December last 37·25 per cent of the total orders on hand were for exports to 58 countries of the world.

The current period 1952-53 ought to be a satisfactory one. Factors over which they had no control, such as wage increases without appropriate increased selling prices, must have some effect on the trad-

ing results of the current period, but, speaking generally, the results of this period should prove to be satisfactory. The Chairman was aware of the increased difficulties of securing orders for railway equipment in South America and even the Australian markets. The need for such equipment existed, but extraneous factors deferred the fulfilment of such needs.

The issued capital had remained unchanged since 1926. The totals of the company's own balance sheet as at September 27, 1952, were well over £6,000,000 and in the consolidated balance sheet of the group over £7,500,0000. It was clear that more cash was needed. They had applied for consent to the issue of new shares and had recommended an increased dividend this year at the rate of 15 per cent, less tax.

Addressing the meeting, the chairman said that as soon as the consent of the Treasury had been received to the proposed issue of new shares they had sent to the Press for publication a notice giving further details of them. The terms of the issue had been very favourably commented on.

The report and accounts were adopted. Resolutions increasing the authorised capital of the company from £1,500,000 to £2,500,000 by the creation of 1,000,000 new shares of £1 each, to be converted into stock, were unanimously passed.

I.R.S.E. Western India Section

Paper on Netherlands signalling at annual meeting

The annual general meeting of the Western India Section of the Institution of Railway Signal Engineers was held in the Board Room of the Western Railway general office in Bombay on February 19. The Chairman, Mr. H. C. Towers, Deputy Chief Engineer, Signals, Western Railway, drew the attention of the meeting to the presence of three distinguished visitors, Mr. J. H. Verstegen, former Chief Signal Engineer of the Netherlands Railway and now of Nederlandsche Machinfabriek Alkmaar, and also a Member of the Institution of Railway Signal Engineers, Mr. J. F. Le Blansch, President of the same firm, and Mr. K. P. Mushran, General Manager, Western Railway.

Mr. Verstegen gave a short talk on signalling development on the Netherlands Railways since the war, including reversible double-line signalling and automatic level crossing barrier gates and warning lights, also crossings with light indication only.

Mr. Le Blansch explained some of the difficulties under which the signalling industry in the Netherlands had operated since the war and the growth of his firm. They had, he said, made an agreement with an American signalling firm to make their apparatus in Holland under licence. There had been difficulty in starting a factory due to scarcity of labour. They made a small beginning which gradually grew and now they manufactured all branches of mechanical and electrical signalling equipment.

Mr. H. C. Towers was re-elected Chairman and Mr. P. R. Mullan, Honorary Secretary and Treasurer of the Section for the year 1953. The Chairman made a reference to the new class of membership, that of Technician Member, which should prove attractive to practical men who had not the necessary academic training to enable them to pass the Associate Membership examination.

Contracts & Tenders

The Peruvian Corporation has placed an order with the Gregg Car Co. Ltd., Belgium, for 25 40-ton bogie, all steel flat wagons.

The Indian Railway Board has placed a contract with the Società Italiana Ernesto Breda, Milan, for the supply of six metre-gauge electric multiple-unit trains, each consisting of one driving-trailer, one non-driving trailer, one motor coach and one driving trailer, in that order. These units may be coupled to form one eight-car set, or, if connected to existing stock, to form one seven-car set.

The stock is intended for the Madras suburban services of the Southern Railway.

British Railways, Eastern Region, have placed the undermentioned contracts:—

Arundel (Contractors) Limited, Bradford: Cleaning and painting of Peterborough North Station, and of station buildings, warehouses, signal boxes, signals and line work at Fordham and Soham Stations.

J. Arundel & Co. (Louth) Ltd., Louth: Cleaning and painting of station buildings, warehouses, signal boxes, signals and line work, Sutton Bridge Station to Walpole, Sutton Bridge Station to Spalding and Sutton Bridge Station to Wisbech; Hilgay, Denver, Downham, Stow Bardolph, Magdalen Road and South Lynn stations.

Tersons Limited, London, N.3: Permanent way blanketing and drainage work, reballasting and cleaning out drains at Abbots Ripton; permanent way blanketing and drainage works between Colchester and Ardleigh; strengthening of retaining walls and track formation works on the Tottenham and Barking line at Walthamstow; reconstruction of up side platform buildings, Grays station.

S. Butler & Co. Ltd., Stanningley: Reconstruction of portion of superstructure of underline bridge carrying main line over road between Grantham and Barkston.

The Director General, Indian Store Department, is calling for tenders for wheels and axles for metre gauge coaches. Full details are given under Official Notices on page 411.

The Special Register Information Service of the Commercial Relations & Exports Department, Board of Trade, reports that the Commercial Secretariat, British Embassy, Bangkok, has notified a call for tenders issued by the State Railways of Thailand for:—

Ten, 20 or 30 diesel-electric locomotives for hauling passenger trains of 420 *tonnes* at the service speed of 70 km.p.h. on straight level track. The track gauge is one metre, rail weight is 50 lb. per yd. and maximum permissible axle load is 12 *tonnes*.

Tenders should reach the Stores Superintendent, State Railways of Thailand, Bangkok, by 2 p.m. on June 18. A copy of the tender documents and drawings is available for inspection at the Board of Trade until April 20, after which date they will be available on loan. A further copy of the specification only is available on loan in order of application. Reference CRE/11335/53 should be quoted.

The Special Register Information Service of the Board of Trade, Commercial Relations & Exports Department, states that the United Kingdom Trade Commissioner at Delhi has notified a call for tenders issued by the Directorate General of Supplies & Disposals, Government of

A Railway Memory of Queen Mary

Queen Mary at Waterloo Station on March 21, 1922, when she performed the opening ceremony. Brig.-General H. W. Drummond, Chairman London & South Western Railway Company, is on her left

India, for the supply of 20 brass injectors. Tenders should reach the Director-General of Supplies & Disposals, Shahjahan Road, New Delhi, by 10 a.m. on April 14.

The Director-General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for the following:—

(*a*)
100 cases (cast steel) for locomotive buffers.
100 plungers for locomotive buffers.
18 buffer coupler, ABC type, complete for "YB," "YD" and "YF" classes.

(*b*)
500 plunger buffer long 13 in. dia. with spindle and plug.

(*c*)
4,300 coupling screw standard complete (B.G.). To I.R.S. Drg. No. WA1. Alt.6 and to I.R.S. Specn. No. R9'50.

Tenders are to be submitted to the Director-General of Industries & Supplies, Shahjahan Road (Section S.R.I.) New Delhi. The following references should be quoted: (*a*) SRI/16176-D III; (*b*) SRI/16166-D III; (*c*) SRI/16167-D IV. The closing dates are: (*a*) April 21; (*b*) April 22; (*c*) April 24.

BURY ST. EDMUNDS - THETFORD BRANCH: WITHDRAWAL OF PASSENGER SERVICE.—On and from June 8, the passenger service will be withdrawn from the following stations and halt on the Bury St. Edmunds—Thetford branch of the Eastern Region: Thetford Bridge; Barnham; Ingham; and Seven Hills Halt.

SAFETY IN THE USE OF POWER PRESSES.—The second report of the Joint Standing Committee on Safety in the Use of Power Presses was published on March 24 by the Factory Department of the Ministry of Labour and National Service. The report records the work accomplished since the publication of the Committee's first report in 1950. The committee has kept under constant review the changing techniques in the use of power presses such as are imposed by modifications in the design of manufactured products in various industries and also the performance of the guards which the committee recommended in its first report. Experience with the use of these guards has shown the need for some revision, modification or extension of their principles. The committee has considered additional devices for preventing uncovenanted strokes of the machine when an interlock guard is in the open position. Proposals have been agreed with the British Power Press Manufacturers' Association for incorporating in the design of new presses certain features enabling the fitting of a safety device and for the design of safer clutch extractors. Much thought has been given by the committee to the preventing of undue wear on the mechanism of interlock guards caused by excessive pressure on pedals and hand-controlled levers which interfere with the functional work of the guard and the use of sequential operating guards, which have the added advantage of facilitating improved production rates, is advocated. Consideration has been given to the safeguarding of hydraulic presses and press brakes by two specially appointed sub-committees whose reports have been published separately. The report refers to the training course for toolsetters on guards and press maintenance held at Birmingham at the end of 1951 which was so satisfactory that it will probably become a regular event. The report is available from H.M. Stationery Office or through any bookseller at a cost of 1s. net.

Notes and News

Diesel Engine Users Association: Annual Luncheon.—The annual luncheon of the Diesel Engine Users Association will be held at the Connaught Rooms, London, W.C.2, on Thursday, April 16, at 12.30 for 1 p.m.

L.M.R. Easter Trains.—From Tuesday last until April 8 the London Midland Region is running 1,135 extra main-line expresses for Easter holiday travellers. On April 2 there were 188 additional trains, and 339 extra expresses for travellers returning home will be run on Easter Monday.

Southern Railway Dramatic Society.—The next production of the Southern Railway Dramatic Society will be "The Happiest Days of Your Life," a farce by John Dighton, to be given on Tuesday, April 21, at the Scala Theatre, Charlotte Street, Tottenham Court Road, London, W.1, at 6.45 p.m.

Record Coal Traffic on British Railways.—On March 30 British Railways completed another record clearance of deep-mined and open-cast coal. During the week to 6 a.m. on that date, 3,383,950 tons were carried—the highest week's total since December, 1949. The weekend figure was 419,900 tons. During the week ended March 21, 214,950 tons of iron and steel from the principal steel works and 334,300 tons of iron ore were conveyed.

B.T.C. Condolences to Queen Elizabeth.—The following telegram, signed by Lord Hurcomb, Chairman, was sent by the British Transport Commission to Queen Elizabeth on the death of Queen Mary:—"The British Transport Commission present their humble duty to Your Majesty and, on behalf of all branches of their organisation, beg to express their profound sympathy with Your Majesty and with the Royal Family in the grievous loss of Queen Mary."

Easter Trains in N.E. Region.—The North Eastern Region has catered for Easter holiday travel by providing 164 relief trains and 172 special cheaper fare excursions; 86 relief trains will run into the Region. Excursions include 102 to seaside resorts, 21 between inland towns, and 21 to race meetings. Relief trains include 148 to London and Scotland; 36 to Lancashire and North-West England; 29 to the Midlands, South Coast and West of England; and four to the Eastern Counties.

Tri-Composite Sleeping Cars in Anglo-Swiss Services.—The third class (*touriste*) sleeping accommodation to be provided in the summer services between Boulogne/Calais and Interlaken or Lucerne, and between Calais and Vienna in the "Arlberg Express," as stated in our March 27 issue, will be in tri-composite sleeping cars of the Compagnie Internationale des Wagons-Lits. These contain eleven compartments, of which seven can be arranged as single-berth (first) or double-berth (second class) compartments, with four third class compartments each containing three berths.

British Steel Founders First Customer/Founder Convention.—On April 15, 16 and 17 the British Steel Founders' Association is to hold its first customer/founder convention at 45, Park Lane, London, W.1. In addition to technicians and other representatives from the steel foundry industry, there will be present at the convention engineers, designers and metallurgists from industries which are users of steel castings. The convention will comprise a series of sessions at each of which discussion will be preceded by the reading of a paper. In all there will be five sections, the subjects being: "Steel Castings and Their Application," "Customer Experience with Steel Castings," "Quality Control and Inspection as Part of the Manufacturing Process," "Research as it Affects the Customer," and "Policy Making and Fact Finding."

Stephenson Locomotive Society, North Western Area; High Peak Rail Tour.—A High Peak Rail Tour has been organised jointly by the Stephenson Locomotive Society, North Western Area, and the Manchester Locomotive Society, to take place on Saturday, April 25. The tour will include the Cromford & High Peak Railway and Duffield-Wirksworth branch of the former Midland Railway. As all the accommodation has already been fully booked it is hoped to repeat the tour in June.

Associated Electrical Industries Report.—The balance available for appropriation of Associated Electrical Industries Limited for the year 1952 is £2,078,870. After transfer of £500,000 to general reserve, it is proposed, in addition to preference and to the 7½ per cent interim ordinary dividend paid last October, to pay a final ordinary dividend of 12½ per cent, making 20 per cent for the year, with a balance carried forward of £567,527. The report states that production of the A.E.I. group factories continues to increase; despite the important contribution by the group to the national defence programme, the rise in value of export shipments was substantially greater than the rise in value of goods sold on the home market.

Combined Refreshment and Waiting Room at Crewe—As the first stage of a comprehensive plan for the improvement of the refreshment room facilities at Crewe Station, a new combined unlicenced refreshment and waiting room was opened on April 1. It is situated on Platform 1/2 and will remain open day and night. These facilities hitherto have been concentrated at the south end of the platform, but by means of an exchange of accommodation it has been possible to convert a general and a ladies' waiting room north of the overbridge. A further scheme is being prepared for a cafeteria and bar on Platform 3/4. These works form part of the Hotels Executive plans for improving station refreshment room facilities throughout the country.

New Staff Hostel at Scunthorpe.—The Eastern Region is building a residential hostel at Scunthorpe for use by railway staff recruited in other areas. It will provide accommodation for forty, but may be extended to house eighty. In general, the hostel will be a single storey building and the grounds will be laid out for recreation. The hostel will also include dining room, kitchen, quiet room and games room. It is expected that the hostel will be ready for occupation in the early summer.

London-Birmingham Air Link for B.I.F.—Olley Air Service Limited will operate an air link between the London and Birmingham sections of the 1953 British Industries Fair, to be held from April 27 to May 8. Consul and Rapide aircraft, seating up to six passengers, will be used on the

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10*s.* 6*d.*—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

ACCOUNTANT (TRAFFIC AUDITOR) required by the Central Railway of Peru—about 30 years of age, preferably single, with general auditing and railway accounting experience, knowledge of Spanish desirable but not essential. Apply—THE SECRETARY, PERUVIAN CORPORATION LTD., 144, Leadenhall Street, London, E.C.3.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s.* By post 2*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE DIRECTOR-GENERAL, India Store Department, 32/44 Edgware Road, London, W.2, invites tenders for the supply of:—Wheels and Axles for 10-ton axle bogie carriage. Metre Gauge. Completely assembled with rolled steel disc wheel centres, tyres 2 ft. 4½ in. dia. on tread, glut rings and axles with 7 in. × 4 in. Journals to I.R.S. drawing No. WA.42. Alt.4. and to I.R.S. part drawings mentioned thereon. Tenders will be required to be kept open for a period of 60 days. Forms of tender, which are returnable by Friday, May 15, 1953, may be purchased at the above address at a cost of 10*s.* each. In all applications for tender forms, the reference S.6743/52/RYL.2. must be quoted.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2*s.* Post free 2*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.) Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8¼ in. by 5¼ in. 82 pp. Diagrams. 5*s.* By post 5*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

R.C.T.S. PUBLICATIONS. "Locomotives of the Great Western Railway." Part Two—Broad Gauge—gives full information on all locomotives owned and absorbed in G.W.R. stock. 109 illustrations, including line drawings. Price 10*s.* Also available—Part One—Preliminary Survey—10*s.*; Part Eleven—Rail Motors etc.—3*s.* 6*d.* "Locomotive Stock Book 1952," 10*s.* All items post free from—HON. PUBLICATIONS OFFICER, R.C.T.S., 18, Holland Avenue, Cheam, Sutton, Surrey.

REQUIRED by the Central Railway of Peru two Locomotive Assistants preferably single and between 26/30. Qualifications: Full apprenticeship with British Railways or Locomotive Builders and experience in one or more of the following: Railway Machine Tool Operation. Welding Boiler works, Locomotive Running or Drawing Office. Also two fully trained Steam Locomotive Engineers aged between 30/45. Experience preferably in South America with locomotive running or locomotive workshops in supervisory positions. A.M.I.Mech.E., desirable and knowledge of Spanish essential. Apply SECRETARY, PERUVIAN CORPORATION LTD., 144, Leadenhall Street, London, E.C.3.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25*s.* per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

service, taking one hour each way, between Croydon and Castle Bromwich. The return fare will be £5 18s., the same as last year.

London Transport Bus Route Wall Map.—The London Transport Executive is issuing a wall map on which, for the first time, bus and trolleybus routes are shown together. The map covers an area of 1,000 sq. miles and shows 370 routes.

London—Newcastle Air Service.—A new London—Newcastle air service to be run by Hunting Air Transport has been approved by the Minister of Transport & Civil Aviation. The fare will be £7 return.

Southern Region Easter Holiday Arrangements.—More than 380 extra main-line trains are being run by the Southern Region for Easter holiday travellers to the South of England resorts. Of these, 95 ran yesterday, April 2. Numerous day excursions have been arranged between London and suburban stations and the seaside and country for all days of the holiday. On Easter Sunday a special Ramblers' Excursion will leave Victoria for Plumpton and Cooksbridge, where conducted walks among the South Downs have been arranged. Special night services are being run on the Newhaven-Dieppe and Dover-Ostend routes.

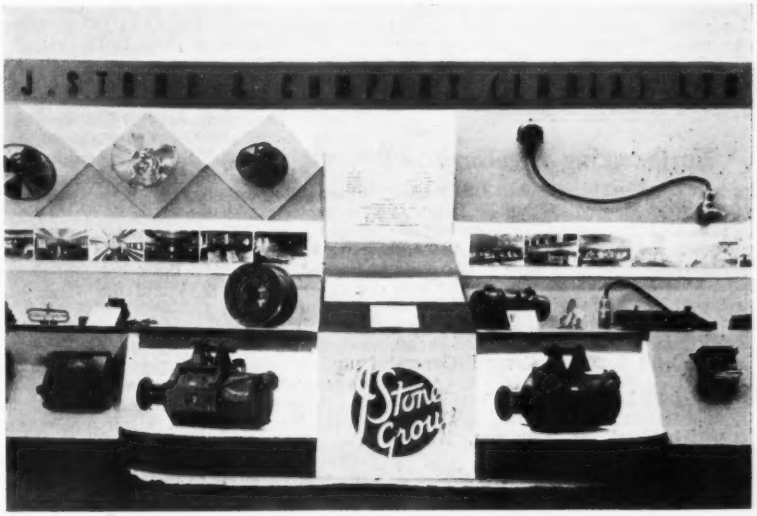
Remodelling and Extension of Ticket Office, Liverpool Street Station (East Side).—Work is now in progress on the remodelling and extension of the ticket office on the East Side of Liverpool Street Station. The scheme includes the complete rearrangement of the inside of the ticket office with the latest improvements in layout and in the design of the individual fittings. At the same time, the office is being extended to incorporate a new season ticket office in place of the existing temporary structure, provided during the war after the destruction of the previous office by enemy action. The design of the new office will allow the busy stairway adjacent to the present temporary accommodation to be restored to its full width, and it is expected that the work will be completed within a few weeks.

British Railways to Buy Wind-Blown Scottish Timber.—British Railways are to buy some £1,750,000 worth of soft wood from the wind-blown area of Scotland. The timber will be supplied over the next two years at prices which have been agreed as reasonable by both the railway executive and the Home Timber Merchants' Association of Scotland, between whom the negotiations have been conducted. The soft wood will be in the form of wagon timbers, sleepers, and crossing timbers. Other timbers will also be purchased as demands arise in addition to the soft wood but the quantity of beechwood is expected to be small, as this timber has limited use for railway purposes. British Railways have offered reduced rates to the Forestry Commission for the conveyance of other wind-blown timber.

Park Royal Goods Depot Improvements.—A scheme for the rebuilding of offices and other accommodation at Park Royal Goods Depot, Western Region, has been approved by the Railway Executive. The work of reconstruction will begin as soon as possible. The depot thirty years ago was little more than a small suburban goods station, but with the development of trading estates, and with the establishment and expansion of factories along Western Avenue, has become the largest goods depot in the London area west of Paddington. The principal features in the scheme are the building of a new two-storey block for use as offices, a bookroom and staff canteen, and the provision of three additional cartage berths. A former empties shed is to be adapted as a service and repair depot for road delivery vehicles, and a new weighbridge house will be erected; the existing 20-ton weighbridge will be replaced by two thirty-ton machines

Cook's New Office in Birmingham.—Thos. Cook & Son Limited opened on March 16 a second travel office in Birmingham. It is situated at 3, Victoria Square. Mr. Arthur Spoor, formerly chief booking clerk in Leeds, has been appointed

Indian Railways Centenary Exhibition Stand



Air-conditioning and ventilating equipment shown by J. Stone & Co. (India) Ltd. at the New Delhi railway centenary exhibition

to take charge of the new branch. The company's association with Birmingham dates from 1842—only a few months after Thomas Cook successfully operated in the Midlands the first railway excursion advertised to the public.

L.M.R. Women's Ambulance Competition.—At Southport on March 6 a Crewe ambulance team won the British Railways (London Midland Region) Women's Ambulance Competition against 20 other women's teams from all parts of the Region. Manchester came second, Earlestown third, and Birmingham fourth. These four teams will now compete against one another in the L.M.R. finals at Conway Hall, London, on May 7 and the winning team will go to the all-regional final later in the year.

Eastern Region Aid to Flood Relief Fund.—The Norwich District Mutual Improvement Class of the Motive Power Department, Eastern Region, opened its instruction coach to the public to raise money for the Flood Relief Fund, and a total of some £78 was collected. The coach had been equipped with a model railway; it was on view at Norwich on February 6-11, and was opened by the Lord Mayor. Keen interest was shown by the public and £46 was collected. Afterwards it was sent to Ipswich, where it was on view on February 14-18, and £32 was collected. No entrance fee was charged, and all money collected was voluntarily contributed.

Birmingham Railway Carriage & Wagon Company Results.—For the year ended December 31, 1952, after deduction of all charges, including tax, the profit of the Birmingham Railway Carriage & Wagon Co. Ltd. carried to the appropriation account is £110,570 (£160,614 for the preceding year). Taxation credit £17,468, relating to previous years, has been credited; United Kingdom taxation charged to profit and loss account is £150,000, whilst depreciation of £46,600 has been charged, and £70,000 transferred to general reserve, and £60,000 (£45,000) to stock and contingencies reserve from provisions shown in the previous year's balance sheet. The directors recommend a dividend of 6 per cent on the preference stock for the half year to December 31, 1952, which, with interim dividend paid in August, amounts to £3,150; a dividend of 10 per cent on the ordinary stock for the year ended December 31, amounting to £52,026; and the balance of £140,869 to be carried forward.

Forthcoming Meetings

April 7 (*Tue.*)—Institute of Traffic Administration, Portsmouth Centre, at the Chamber of Commerce, Portsmouth, at 7.15 p.m. Annual General Meeting.

April 8 (*Wed.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, at 6 p.m. Annual General Meeting.

April 9 (*Thu.*).—Institute of Traffic Administration, Hull Centre, at the Imperial Hotel, at 7.30 p.m. Annual General Meeting.

April 9 (*Thu.*).—Institute of Traffic Administration, Glasgow Centre, at the Kenilworth Hotel, Queen Street, Glasgow, at 7 p.m. Annual General Meeting.

April 10 (*Fri.*).—The Railway Club, at 57, Fetter Lane, London, E.C.4, at 7 p.m. Paper on "An Historical Review of Railway Signalling down to Grouping," by Mr. T. S. Lascelles.

April 11 (*Sat.*).—Electric Locomotive Society, at the Fred Tallant Hall, 153, Drummond Street, London, N.W.1, at 3 p.m. Film show, including French Electric Railways and London to Brighton in Four Minutes.

April 11 (*Sat.*).—Permanent Way Institution, East Anglia Section. Joint Meeting with London Section. Visit to Ipswich Locomotive Department Reconstruction Works, at 2 p.m.

April 11 (*Sat.*).—Institute of Traffic Administration, Merseyside Centre, at Woodside Hotel, Birkenhead, at 7 p.m. Annual Dinner and Dance.

April 11 (*Sat.*).—Stephenson Locomotive Society, at 32, Russell Road, Kensington, London, W.14, at 3 p.m. Annual General Meeting, followed by tea and film show.

April 11 (*Sat.*).—British Railways, Southern Region, Lecture and Debating Society. All-day visit to Brighton Locomotive Works and Motive Power Depot, and Lancing Carriage Works.

April 13 (*Mon.*).—The Historical Model Railway Society at the Headquarters of the Stephenson Locomotive Society, 32, Russell Road, Kensington, W.14, at 7 p.m. Paper on "The Festiniog Railway," by Mr. J. F. Bruton.

April 13 (*Mon.*).—Institute of Traffic Administration, Birmingham Centre, at the Crown Hotel, Corporation Street, at 7.15 p.m. Talk on "Air Transport."

April 13 (*Mon.*).—The Institute of Transport, Metropolitan Section, at 80, Portland Place, London, W.1, at 5.30 for 6 p.m. Paper on "The Army Transportation Service," by Mr. D. R. Stenhouse.

Railway Stock Market

Holiday influences have restricted business in stock markets, but the general undertone, particularly in the gilt-edged and industrial sections, was only slightly easier. Tax reduction hopes continued to help sentiment; in some quarters it is being suggested that a lower bank rate may be in prospect. The industrial sections again have been helped by the further batch of dividend increases which have featured company results, and have drawn wider attention to the growing tendency towards a slightly more liberal dividend policy. The belief that, in general, dividends will be a little higher has been an important factor influencing the upward trend in share values during recent weeks.

It is realised however that, with a big movement away from controls and inflation and back to free enterprise markets and increased competition, company results must fluctuate from year to year much more sharply than since the end of the war, when shortages of materials were the dominating factor. Then inefficient companies could do well, but now it will be the efficient and enterprising ones which will offer scope for higher earnings and dividends.

Foreign rails continued to attract a fair amount of attention. A new feature has been a sharp advance, from £37 to £40 at the time of going to Press, in Guayaquil & Quito 5 per cent bonds.

There was again a large business in White Pass & Yukon no par value shares, which, however, have come back to $36, sentiment having been affected by the continued absence of confirmation of rumours of a bid by U.S.A. interests, though later the lower price brought in strong speculative buying of the shares. The convertible debentures at £123 also showed a sharp decline on balance. Canadian Pacifics eased fractionally to $55⅛, the 4 per cent preference stock was £65½ and the 4 per cent debentures £80½.

United of Havana stocks attracted a little speculative support and strengthened. The "A" was 60, the "B" 55, the second income stock 20½ and the consolidated stock 3. It is clear that current prices of the stocks are moderate if a fair and reasonable offer for the railway comes along. The railway is vital to the Cuban economy in transporting sugar to the ports, and looking ahead to the very large sums that will have to be spent on new rolling stock and replacements, it seems that the Cuban Government, who have been running the railway for years, is now the only source able to provide the necessary finance to keep the railway in working order.

Manila Railway issues have been quiet following their recent reaction. The "A" debentures were 85 and the "B" debentures 74, while the preference shares were 9s. and the 1s. ordinary shares 3s. 6d.

Barsi changed hands around 122½. Nitrate Rails shares were 20s. 9d. and Taltal shares marked around 14s. 9d.

There were again a few markings of business in the old Russian railway bonds, though looking ahead, speculators face the danger that when the present tendency to give a little attention to these bonds dies down, sellers will again discover it is very difficult to find a buyer.

Antofagasta ordinary was 9¾, the preference stock 48xd., while the 5 per cent (Bolivia) debentures have been dealt in around 65½. Mexican Central "A" Debentures became firmer at 70½.

Brazil Railway gold bonds changed hands up to 7, and San Paulo ordinary units were quoted at 6s. 4½d.

Recent firmness has been maintained by road transport shares, partly because it is more generally realised that assets are included in the accounts at much below current replacement values. Lancashire Transport were 46s. xd., Southdown 31s. 3d., West Riding 34s. 9d., while Maidstone & District marked around 27s. and Northern & General around 28s. 6d. xd. B.E.T. deferred stock at £480 failed to hold best levels.

Engineering and kindred shares received a fair amount of attention. Vickers at 49s. 3d. and Cammell Laird 5s. shares at 14s. 1½d. showed firmness, awaiting the dividend announcements, while John Brown at 46s. 6d. were helped by market talk of a possible dividend increase. Guest Keen were 54s. 6d., Tube Investments little changed at 61s. 6d. and Babcock & Wilcox (72s. 6d.) active in the hope of a dividend increase. T. W. Ward were 76s. 9d. and Ruston & Hornsby 40s. 6d.

Higher dividend hopes kept Beyer Peacock active around 37s. 6d., Charles Roberts 5s. shares were 14s. 6d. "ex" the return of capital, Hurst Nelson 42s. 6d. and North British Locomotive 15s. 4½d., but a little disappointment in the market with the unchanged 10 per cent dividend put Birmingham Carriage back to 33s. 10½d. Vulcan Foundry were 23s. 3d., Gloucester Wagon 10s. shares 12s., Wagon Repairs 5s. shares 12s. 3d. and Central Wagon 67s. 9d.